SERIES: PDRD-75 | DESCRIPTION: AC-DC DIN RAIL POWER SUPPLY

FEATURES

- certified to UL 61010, EN/BS EN 62368-1
- CISPR32/EN55032 CLASS B compliant
- 85~305 Vac, 120~430 Vdc input voltage
- -40 ~ 85 °C operating temperature with derating
- over-temperature, output over-voltage, over-current, short-circuit protection
- constant current SCP and OCP
- safety CLASS I
- output voltage trim



MODEL	output voltage typ (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency[2] typ (%)
PDRD-75-12	12	6.3	75.6	80	88
PDRD-75-24	24	3.2	76.8	120	90
PDRD-75-48	48	1.6	76.8	150	91

Notes:
1. Tested at full load, nominal input, 20 MHz bandwidth oscilloscope with 47 µF electrolytic and 1 µF ceramic capacitor on the output.
2. At 230 Vac.
3. All specifications are measured at Ta=25°C, humidity <75% RH, nominal input voltage, and rated output load unless otherwise specified.

PART NUMBER KEY

PDRD-75 - XX

Base Number — Output Voltage

Please read our datasheet & drawing disclaimer here.

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INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input dc input	85 120		305 430	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			2 1	A A
inrush current	at 115 Vac, cold start at 230 Vac, cold start			30 50	A A
leakage current	at 277 Vac, 60 Hz			0.5	mA
no load power consumption	at 115 Vac at 230 Vac		0.5 1.0	1.0 1.5	W W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	12 Vdc output model 24 Vdc output model 48 Vdc output model			6,000 1,500 1,000	µF µF µF
initial set point accuracy	12 Vdc output model 24 & 48 Vdc output model			±2 ±1	%
line regulation	at rated load			±0.5	%
load regulation	0~100% load			±1	%
adjustability	12 Vdc output model 24 Vdc output model 48 Vdc output model	12 24 48		14 28 48	Vdc Vdc Vdc
hold-up time	at 115 Vac at 230 Vac		12 60		ms ms
switching frequency			65		kHz
temperature coefficient				±0.03	%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	12 Vdc output model, hiccup, auto-recovery 24 Vdc output model, hiccup, auto-recovery 48 Vdc output model, hiccup, auto-recovery			17 33 60	Vdc Vdc Vdc
over current protection	at 230 Vac, rated load, auto recovery normal temperature high & low temperature	 110 105		 150	 % %
short circuit protection[4]	constant current mode, continuous, auto recovery				

Notes: 4. Recovery time <5s after the short circuit disappear.

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SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute, 10mA max input to ground for 1 minute, 10mA max	4,000 2,000			Vac Vac
safety approvals	certified to 61010: UL certified to 62368: EN, BS EN designed to meet 60335: TBA designed to meet 61558: TBA designed to meet 4943: TBA				
safety class	CLASS I				
conducted emissions	CISPR32/EN55032 CLASS B				
radiated emissions	CISPR32/EN55032 CLASS B				
harmonic current	IEC/EN 61000-3-2 CLASS A				
ESD	IEC/EN 61000-4-2 Contact ±6KV; Air ±8KV, perf. Criteria A				
radiated immunity	IEC/EN 61000-4-3 10V/m, perf. Criteria A				
EFT/burst	IEC/EN 61000-4-4 ±2KV, perf. Criteria A				
surge	IEC/EN 61000-4-5 line to line ±2KV; line to ground ±4KV, perf. Criteria A				
conducted immunity	IEC/EN 61000-4-6 10Vrms, perf. Criteria A				
power-frequency magnetic fields immunity	EN 61000-4-8 30A/m, perf. Criteria A				
voltage dips and interruptions	IEC/EN 61000-4-11 0%, 70%, perf. Criteria B				
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 curves	-40		85	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	10		95	%
storage humidity	non-condensing	20		95	%

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MECHANICAL

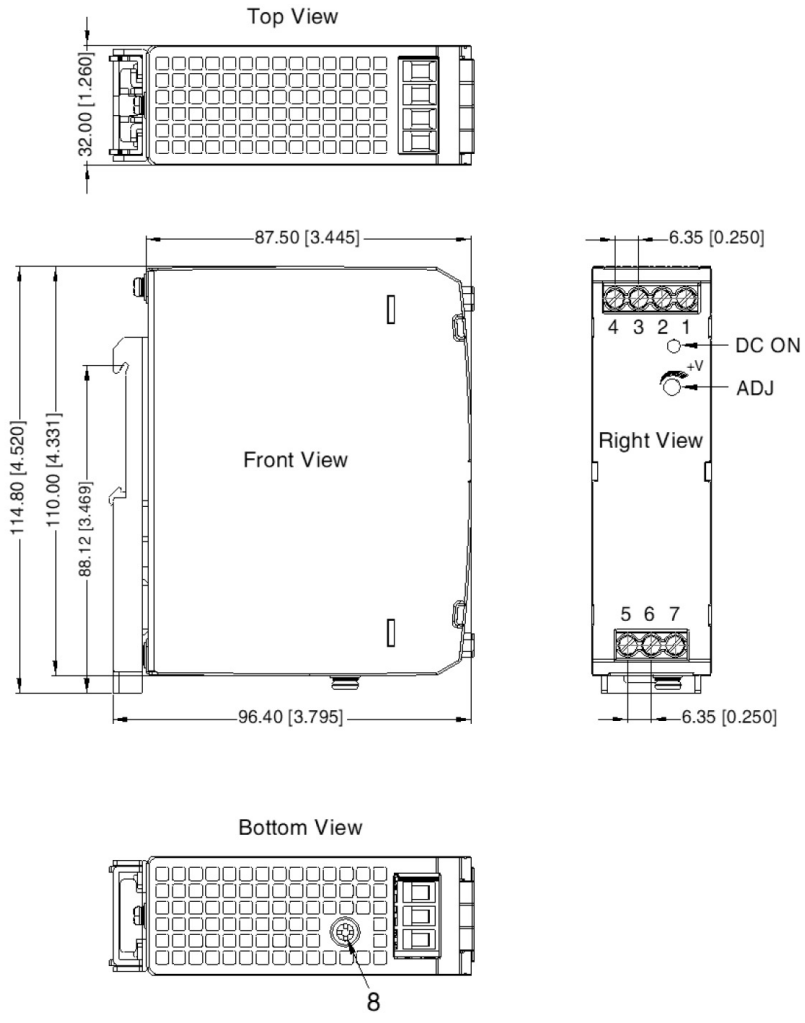
parameter	conditions/description	min	typ	max	units
dimensions	110.00 x 87.50 x 32.00				mm
material	metal (AL1100, SGCC)				
weight			340		g
cooling	natural convection				

MECHANICAL DRAWING

units: mm [inch]
ADJ: output adjustable resistor
wire range 26-10 AWG
tightening torque: Max 0.4 N·m
Monting rail: TS35, rail needs to connect to safety ground
tolerances: ±1.00 [±0.039]

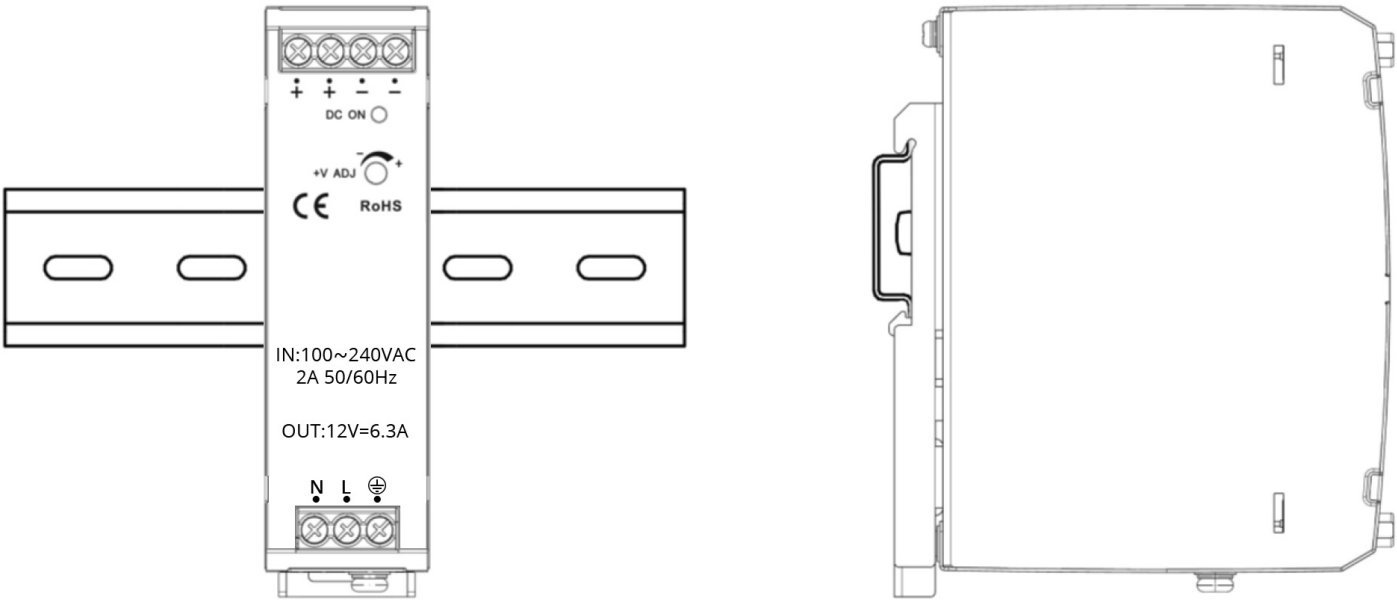
PIN CONNECTIONS	
TERMINAL	Function
1	-Vo
2	-Vo
3	+Vo
4	+Vo
5	AC (N)
6	AC (L)
7	⏚

Note: 7,8 any position must be connected to the earth ⏚.



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INSTALLATION DIAGRAM

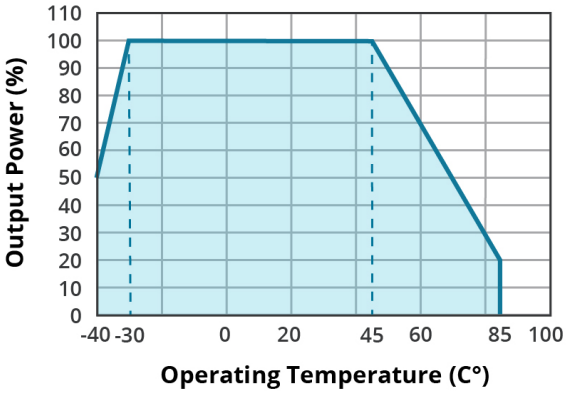


Note: 5. Keep the following installation clearances: 20mm on top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).

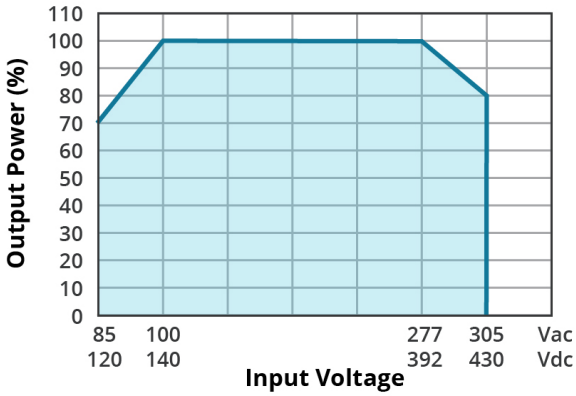
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DERATING CURVES

TEMPERATURE DERATING CURVE (at 85~305 Vac / 120~430 Vdc)



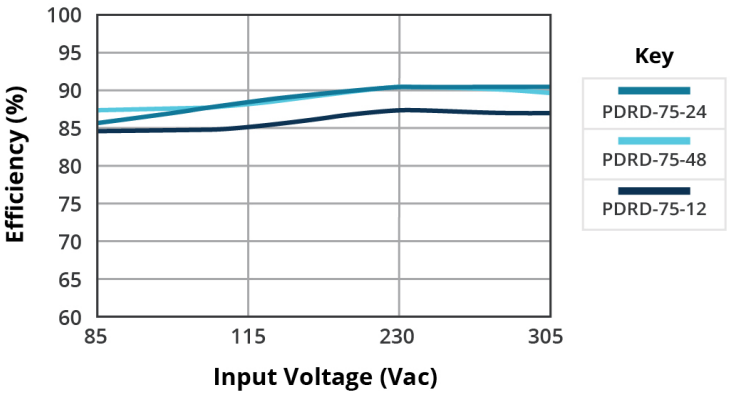
INPUT VOLTAGE DERATING CURVE (at 25°C)



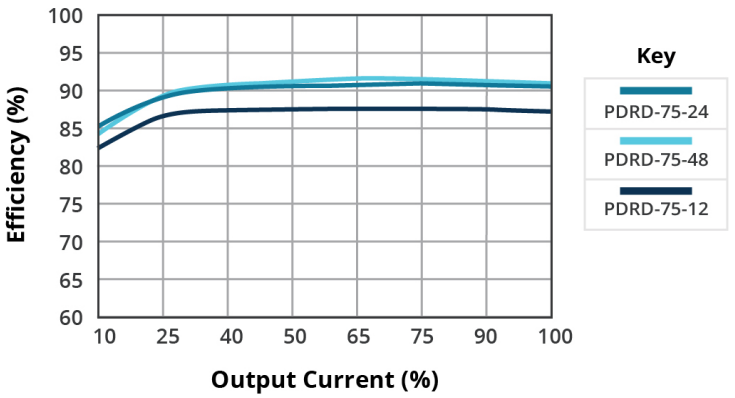
Note: 6. With an AC input voltage between 85 ~ 100VAC/277 ~ 305VAC and a DC input between 120 ~ 140VDC/392 ~ 430VDC the output power must be derated as per the temperature derating curves.
7. This product is suitable for applications using natural convection cooling; for applications in closed environment please consult CUI.

EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE (full load)



EFFICIENCY VS OUTPUT LOAD (Vin=230 Vac)



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REVISION HISTORY

rev.	description	date
1.0	initial release	07/06/2023

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

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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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