SERIES: PDRA-120 | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

- up to 120 W continuous power
- universal input voltage range
- over current, over voltage, input under voltage, short circuit, and over temperature protections
- active power factor correction
- remote on/off control
- output trim
- low ripple and noise
- -25 to +70°C temperature range
- UL/cUL 60950-1 safety approval
- efficiency up to 93%

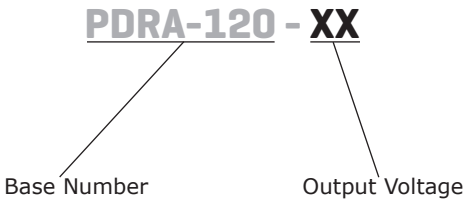


MODEL

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency[2] typ (%)
PDRA-120-12	12	10	120	100	89
PDRA-120-24*	24	5	120	100	92
PDRA-120-48*	48	2.5	120	100	93

Notes:
1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with a 1 µF ceramic and 10 µF electrolytyic capacitor on the output.
2. At 230 Vac input.
3. All specifications are measured at Ta=25°C, humidity <75%, nominal input voltage, and rated output load unless otherwise specified.
4. * Discontinued model

PART NUMBER KEY



Please read our datasheet & drawing disclaimer here.

INPUT

parameter	conditions/description	min	typ	max	units
voltage		85 100		264 370	Vac Vdc
frequency		47		63	Hz
under voltage protection	start-up voltage at full load shutdown voltage at full load	76 67		83 75	Vac Vac
current	at 115 Vac at 230 Vac			1.5 0.75	A A
inrush current	at 115 Vac at 230 Vac		35 70		A A
power factor correction	at 115 Vac at 230 Vac		0.98 0.96		
no load power consumption				0.75	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	12 Vdc output model 24 Vdc output model 48 Vdc output model			10,000 4,700 1,700	µF µF µF
initial set point accuracy				±1	%
line regulation	at full load			±0.5	%
load regulation				±1	%
adjustability[1]	via built in trim pot		±10		%
start-up time				1.5	s
hold-up time	at 115/230 Vac		25		ms
switching frequency			100		kHz
temperature coefficient			±0.03		%/°C

Notes: 1. Max output power of 120 W.

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	continuous, auto recovery				
over current protection	activates after 3 seconds, auto recovery	110		150	%
short circuit protection	continuous, auto recovery				
over temperature protection	output shutdown, auto recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute input to ground for 1 minute output to ground for 1 minute	3,000 1,500 500			Vac Vac Vac
safety approvals	UL 60950-1, EN 60950-1				
safety class	class I				
EMI/EMC	EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3				
conducted emissions	CISPR22/EN55022, Class B				
radiated emissions	CISPR22/EN55022, Class B				
ESD	IEC/EN61000-4-2, contact ±6 kV/ air ±8 kV, Class B				
radiated immunity	IEC/EN61000-4-3, 10 V/m, Class A				
EFT/burst	IEC/EN61000-4-4, ±4 kV, Class B				

Notes: 2. 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.

SAFETY & COMPLIANCE (CONTINUED)

parameter	conditions/description	min	typ	max	units
surge	IEC/EN61000-4-5, line to line ±2 kV/ line to ground ±4 kV, Class B				
conducted immunity	IEC/EN61000-4-6, 10 Vr.m.s, Class A				
PFM	IEC/EN61000-4-8, 10 A/m, Class A				
voltage dips & interruptions	IEC/EN61000-4-11, 0%-70%, Class B				
MTBF	as per MIL-HDBK-217F at 25 °C	300,000			hours
RoHS	2011/65/EU				

Notes: 1. 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	-25		70	°C
storage temperature		-25		85	°C
storage humidity	non-condensing			95	%

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	35.00 x 125.00 x 120.00 (1.38 x 4.92 x 4.724 inches)				mm
material	heat resistant plastic (UL94V-0) and metal				
weight	12 Vdc output model all other models		580 560		g g

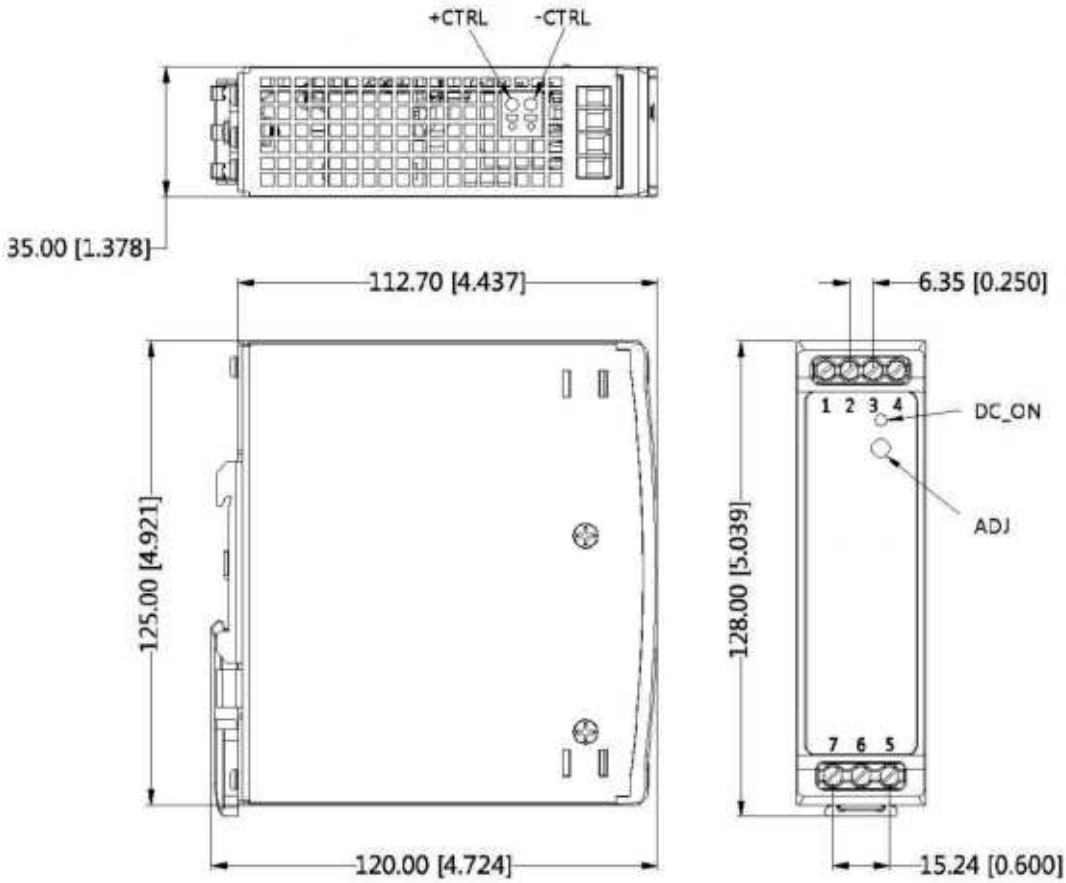
MECHANICAL DRAWING

units: mm [inch]
tolerance: ±1.00[±0.039]

wire range: 26~10 AWG
strip length: 8.0 mm
mounts to DIN RAIL TS35
tightening torque: max 0.4 N*m

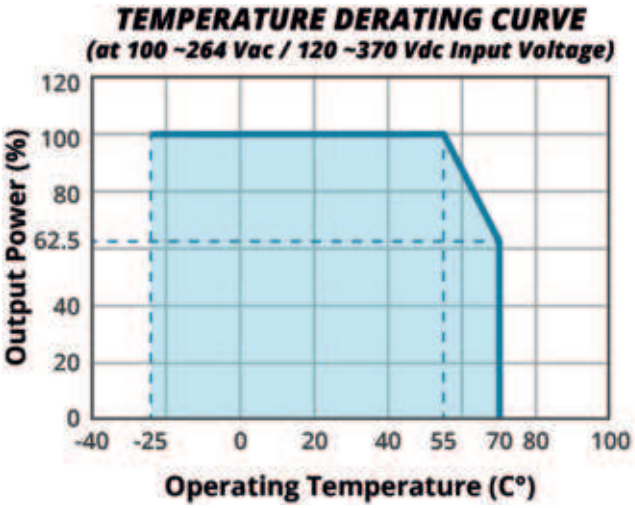
TERMINAL CONNECTIONS	
TERMINAL	Function
1	+Vout
2	+Vout
3	-Vout
4	-Vout
5	AC(N)
6	AC(L)
7	⏚

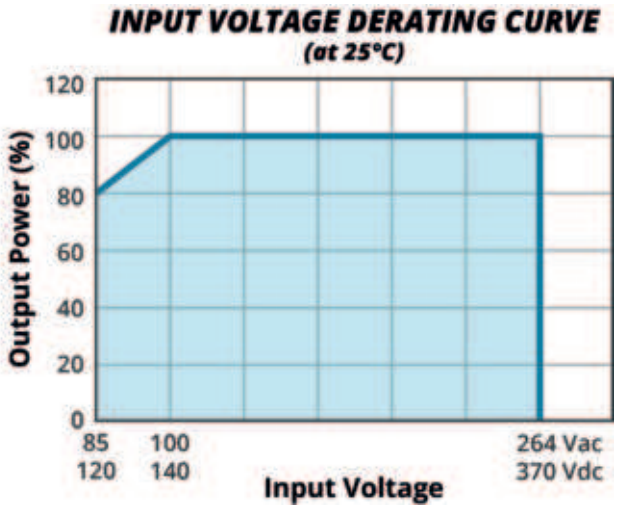
CONTROL TERMINAL	
TERMINAL	Function
1	+CTRL
2	-CTRL



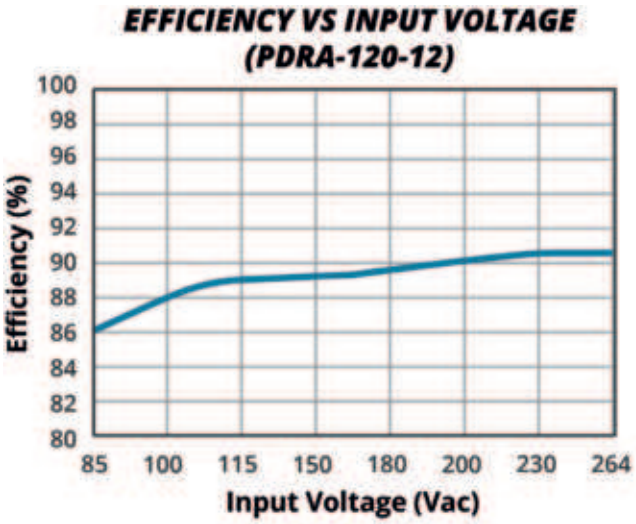
Note: 2. Rail needs to connect to safety ground.

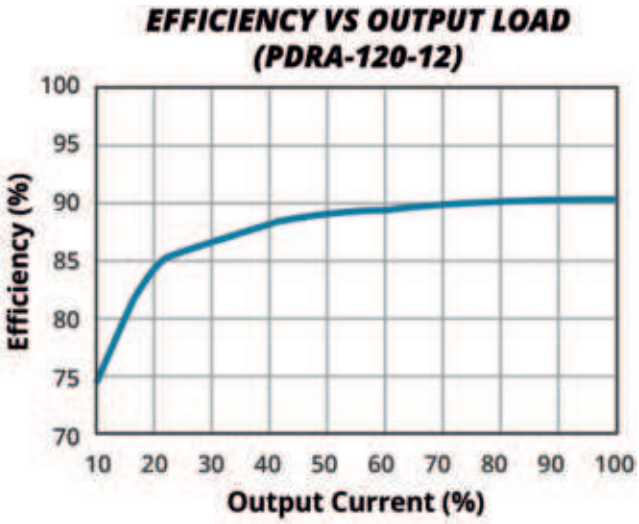
DERATING CURVES

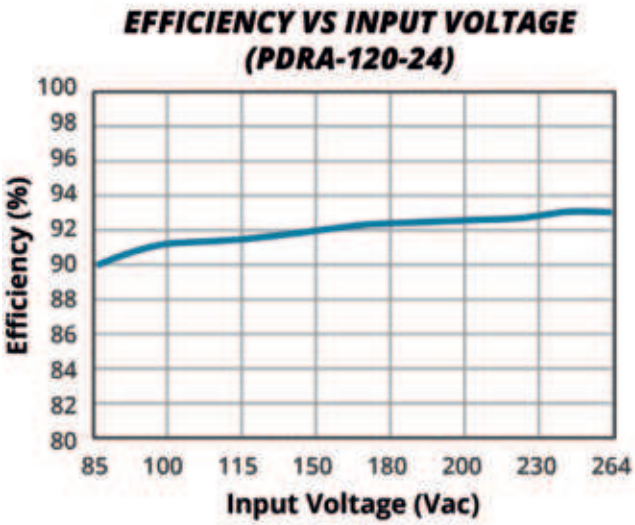


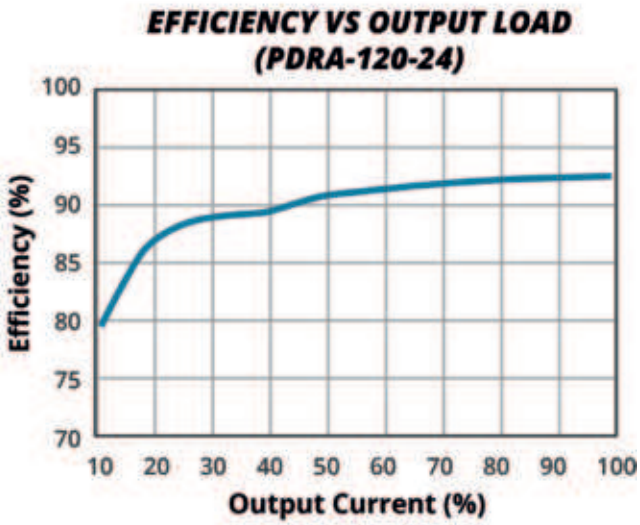


EFFICIENCY CURVES

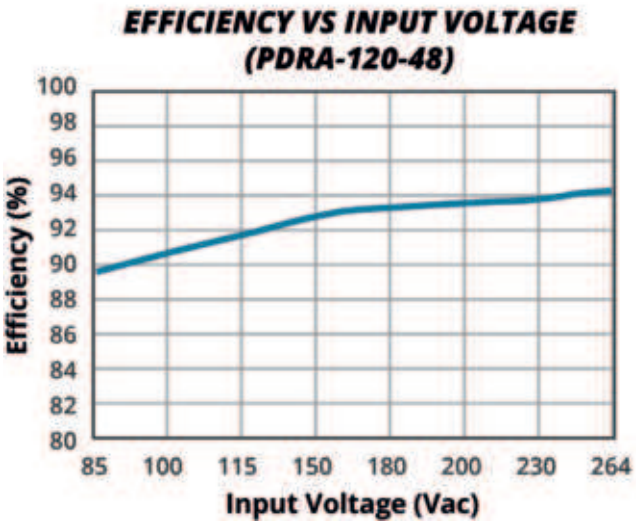


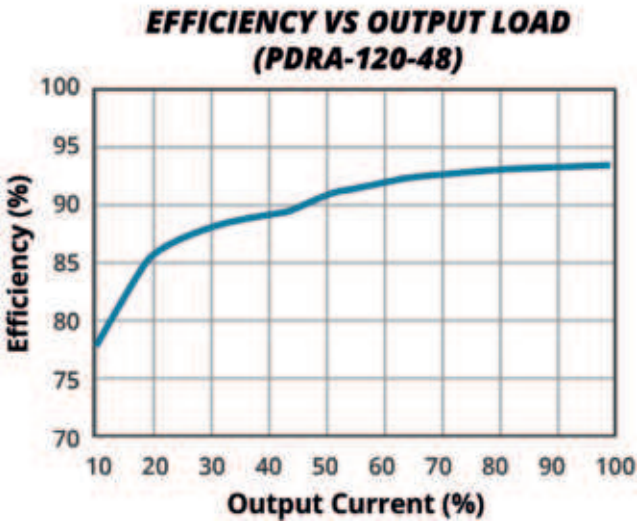






EFFICIENCY CURVES (CONTINUED)





APPLICATION CIRCUIT

Figure 1 Typical Application Circuit

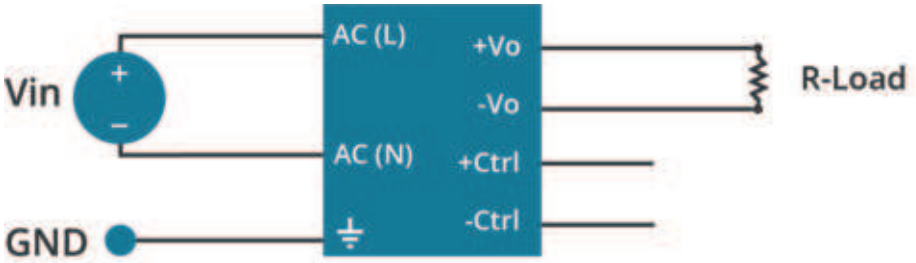
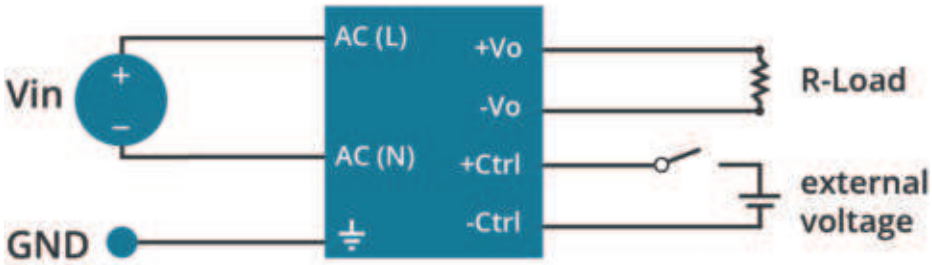


Figure 2 Remote Control Applications Circuit



The power supply can be turned on/off by using the "CTRL" terminals.
Enable output: open
Disable output: 4.5~12.5 Vdc

REVISION HISTORY

rev.	description	date
1.0	initial release	10/17/2016
1.01	added 12 Vdc & 48 Vdc output models	02/01/2018
1.02	company logo updated	02/05/2021
1.03	derating and efficicency curves and application circuit updated	02/17/2022
1.04	discontinued models PDRA-120-24, PDRA-120-48	07/22/2024

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

CUI INC
a bel group

Headquarters
15575 SW Sequoia Pkwy #100
Portland, OR 97224
800.275.4899
Fax 503.612.2383
cui.com
techsupport@cui.com

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