

12/09/2020

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DESCRIPTION: INTERNAL AC-DC POWER SUPPLY SERIES: VGS-150D

FEATURES

- wide input range (85 ~ 305 VAC)
- available with conformal coating or terminal cover options
- active Power Factor Correction (PFC)
- certified to IEC/EN/UL 62368
- designed to meet IEC/EN 61558, IEC/EN 60335, and GB4943
- output over voltage, over current, over temperature, short circuit protection
- CISPR/EN55032 Class B radiated/conducted emissions
- input over voltage category III for fixed installations
- 300 VAC surge resilience (5 seconds)





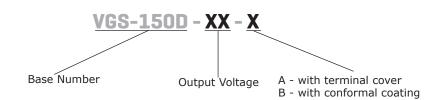
MODEL		utput Oltage	output current	output power	ripple and noise²	efficiency ³
	(Vdc)	range¹ (Vdc)	max (A)	max (W)	max (mVp-p)	typ (%)
VGS-150D-12	12	10.2 ~ 13.8	12.5	150.0	100	85.5
VGS-150D-15	15	13.5 ~ 18.0	10.0	150.0	100	86.0
VGS-150D-24	24	21.6 ~ 28.8	6.3	151.2	150	87.0
VGS-150D-48	48	45.6 ~ 55.2	3.2	153.6	250	88.0

Notes:

- 1. Output adjustable via built-in trimpot. The actual adjustment range may extend beyond the values listed and care should be taken to ensure the output voltage and output power do not exceed stated limits.

 2. Ripple & noise are measured at 20 MHz BW with 47 µF aluminum electrolytic capacitor and 0.1 µF ceramic capacitor on the output.
- 3. Measured at 230 Vac

PART NUMBER KEY



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 85 Vac			2.5	Α
	at 115 Vac			2.0	Α
	at 230 Vac			1.0	Α
	at 115 Vac, cold start			30	А
inrush current	at 230 Vac, cold start			45	Α
leakage current	at 240 Vac			2	mA
	at 115 Vac, full load	0.97			
power factor	at 230 Vac, full load	0.91			

OUTPUT

parameter	conditions/description	min	typ	max	units
annositive land	12 Vdc output			5,000	μF
	15 Vdc output			5,000	μF
capacitive load	24 Vdc output			5,000	μF
	48 Vdc output			3,000	μF
initial set point accuracy	at full load				
	12 & 15 Vdc output		±2		%
	24 & 48 Vdc output		±1		%
line regulation			±0.5		%
load regulation	0%~100% load		±0.5		%
hold-up time	at 230 Vac	16			ms
temperature coefficient			±0.05		%/°C
remote on/off (CTRL)	turn on (0 ~ 0.8 Vdc) turn off (4 ~ 10 Vdc)				

PROTECTIONS

parameter	conditions/description	min	typ	max	units
	12 Vdc output model, output shutdown, latch			16.8	Vdc
over voltage protection	15 Vdc output model, output shutdown, latch			24.5	Vdc
	24 Vdc output model, output shutdown, latch			33.6	Vdc
	48 Vdc output model, output shutdown, latch			60.0	Vdc
over current protection	constant current, auto-recovery	105		150	%
aver to see a section 1	over temperature protection activation			85	°C
over temperature protection ¹	over temperature protection deactivation	50			°C
short circuit protection	constant current, continuous, auto-recovery				

Note: 1. Over temperature protection thresholds under full load conditions.

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to ground, 1 min, <10mA input to output, 1 min, <10mA output to ground, 1 min, <5mA	2,000 4,000 500			Vac Vac Vac
safety approvals	certified to 62368: IEC, EN, UL designed to meet designed to meet designed to meet GB4943				
safety class	Class I				
conducted emissions	CISPR32/EN55032 CLASS B				
radiated emissions	CISPR32/EN55032 CLASS B				
harmonic current	IEC/EN61000-3-2 CLASS A				
voltage flicker	IEC/EN61000-3-3				
ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV perf	. Criteria A			
radiated immunity	IEC/EN61000-4-3 3V/m perf. Criteria B				
EFT/burst	IEC/EN61000-4-4 ±2KV perf. Criteria A				
surge	IEC/EN61000-4-5 line to line ±1kV/line to groun	nd ±2kV perf. Crit	eria A		
conducted immunity	IEC/EN61000-4-6 10Vr.m.s perf. Criteria A				
voltage dips and interruptions	IEC/EN61000-4-11 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 curve	-30		70	°C
storage temperature		-40		85	°C
storage humidity	non-condensing	10		95	%

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	179 × 99 × 30				mm
weight			500		g
cooling	natural convection				
case material	metal (AL1100, SGCC)				

MECHANICAL DRAWING

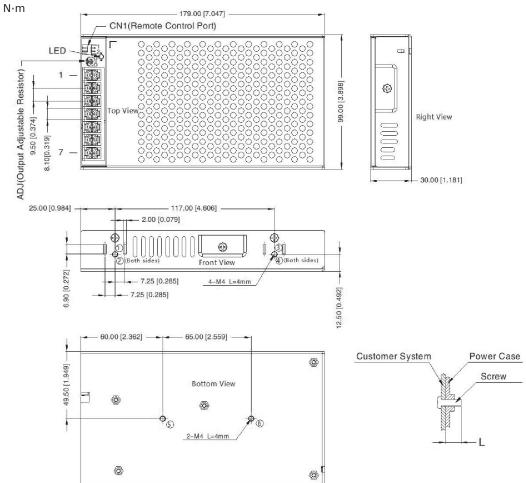
units: mm [inch]

tolerance: $\pm 1.0 [\pm 0.039]$ wire range: 22-12 AWG

connector tightening torque: M3.5, 0.8 N·m

PIN CONNECTIONS				
PIN	Function			
1	+Vo			
2	+Vo			
3	-Vo			
4	-Vo			
5	<u></u>			
6	AC(N)			
7	AC(L)			

Note: At least one hole position, ① ~ ⑥, must be securely connected to Protective Earth (PE). ④

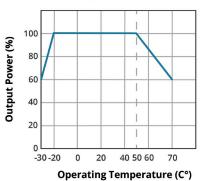


CN1: KANGDAO TJC3-NAWD-2P					
PIN	FUNCTION	CONNECTOR	TERMINAL		
1	RC+	KANGDAO	KANGDAO		
2	RC-	XI-25001-2Y	XH2.54-TE		

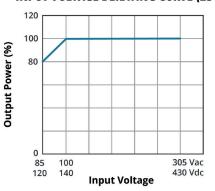
POSITION	SCREW SPEC	L (MAX)	TORQUE (MAX)
1~6	M4	4mm	0.9N·m

DERATING CURVE

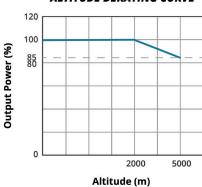




INPUT VOLTAGE DERATING CURVE (25°C)

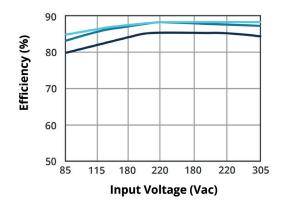


ALTITUDE DERATING CURVE



EFFICIENCY CURVES

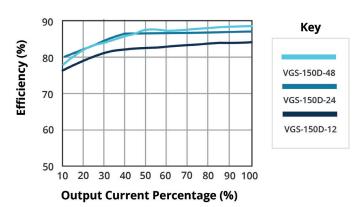
EFFICIENCY VS INPUT VOLTAGE (FULL LOAD)





VGS-150D-12

EFFICIENCY VS OUTPUT LOAD



Additional Resources: Product Page | 3D Model

CUI Inc | SERIES: VGS-150D | DESCRIPTION: AC-DC POWER SUPPLY date 12/09/2020 | page 6 of 6

REVISION HISTORY

rev.	description	date
1.0	initial release	12/09/2020

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



Headquarters 20050 SW 112th Ave. Tualatin, OR 97062 **800.275.4899**

Fax 503.612.2383 **cui**.com techsupport@cui.com

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

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