SERIES: VGS-500 | **DESCRIPTION:** AC-DC POWER SUPPLY

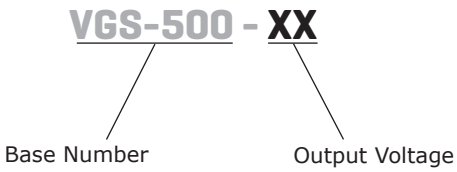
FEATURES

- 85 ~ 305 Vac, 120 ~ 430 Vdc input voltage
- adjustable output voltage
- accepts AC or DC Input (dual use of same terminal)
- certified to EN/BS EN/UL 62368-1
- design to meet IEC/UL 60335-1, EN 61558, GB 4943
- CISPR32/EN55032 CLASS B compliant
- temperature range -40 °C ~ +85 °C with derating
- baseplate cooling
- over-temperature, output over-voltage, over-current, and short-circuit protection
- over-current & short-circuit protection delay
- 5,000 m operating altitude

MODEL	output voltage		output current	output power	ripple and noise[1]	efficiency[2]
	typ (Vdc)	range (Vdc)	max (A)	max (W)	typ (mVp-p)	typ (%)
VGS-500-5	5	4.5~5.5	80.0	400.0	200	90
VGS-500-12	12	11.4~12.6	41.7	500.4	200	94
VGS-500-24	24	22.8~25.2	20.9	501.6	200	94.5
VGS-500-36	36	34.2~37.8	13.9	500.4	200	95
VGS-500-48	48	45.6~50.4	10.45	501.6	200	95
VGS-500-55	55	45.0~58.0	8.9	489.5	200	95

Note:
1. Ripple and noise are measured at 20 MHz BW with 47 uF aluminum electrolytic capacitor and 0.1 uF ceramic capacitor on the output.
2. Measured at 230 Vac.
3. Unless otherwise specified, the parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% RH with nominal input voltage and rated output load.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage range	ac input dc input	85 120		305 430	Vac Vdc
frequency range		47		63	Hz
current	at 115 Vac at 230 Vac			5 3	A A
inrush current	at 115 Vac, cold start at 230 Vac, cold start		30 60		A A
leakage current	at 277 Vac			0.75	mA
power factor	at 115 Vac, full load at 230 Vac, full load	0.98 0.95			

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	at 25°C 5 Vdc output model 12 Vdc output model 24 Vdc output model 36 Vdc output model 48 Vdc output model 55 Vdc output model			 12,000 10,000 8,000 6,000 4,000 2,000	 µF µF µF µF µF µF
initial set point acuracy	5 Vdc output model, full load range all other models, full load range		±2 ±1		% %
line regulation	5 Vdc output model, rated load all other models, rated load		±0.5 ±0.3		% %
load regulation	5 V model, 0~100% load all other models, 0~100% load		±1 ±0.5		% %
hold-up time	at 115 & 230 Vac, full load		12		ms

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery, hiccup	110			%
over voltage protection	output shut-down, auto recovery 5 Vdc output model 12 Vdc output model 24 Vdc output model 36 Vdc output model 48 Vdc output model 55 Vdc output model	 5.75 13.2 26.4 39.6 52.8 60.0		 6.75 15.6 31.2 46.8 60.0 69.0	 Vdc Vdc Vdc Vdc Vdc Vdc
short circuit protection[4]	hiccup, continuous, auto recovery				
over temperature protection	output shutdown, auto recovery				

Note: 4. Recovery time is 5s max after the abnormality is removed.

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute, 10 mA max input to ground for 1 minute, 10 mA max output to ground for 1 minute, 10 mA max	4,000 2,000 1,500			Vac Vac Vac
safety approvals	certified to 62368-1[5]: EN, BS EN, UL designed to meet 60335-1: IEC, UL designed to meet 61558-1: EN designed to meet 4943-1: GB				
safety class	Class I				
conducted emissions	CISPR32/EN55032 CLASS B				
radiated emissions	CISPR32/EN55032 CLASS B				
harmonic current	IEC/EN61000-3-2 CLASS A/D				
voltage flicker	IEC/EN61000-3-3				
ESD	IEC/EN61000-4-2 Contact ±8KV /Air ±15KV, perf. Criteria A				
radiated immunity	IEC/EN61000-4-3 10V/m, perf. Criteria A				
EFT/burst	IEC/EN61000-4-4 ±2KV, perf. Criteria A output port: EN61000-6-2 ±2KV, perf. Criteria A				
surge	IEC/EN61000-4-5 line to line ±2KV/line to ground, perf. Criteria A output port: EN61000-6-2 line to line ±0.5KV/line to ground, perf. Criteria A				
conducted immunity	IEC/EN61000-4-6 10Vrms, perf. Criteria A output port: EN61000-6-2 10Vrms, perf. Criteria A				
power frequency magnetic field	IEC/EN61000-4-8 30A/m, perf. Criteria A				
voltage dips and interruption	IEC/EN61000-4-11 0%, 70%, perf. Criteria B				
intercom interference test	MS-SOP-DQC-007, perf. Criteria B				
RoHS compliant	yes				
MTBF	as per MIL-HDBK-217F at 25 °C	200,000			hrs

Note: 5. Certification applies to 100~277 Vac applications.

ENVIRONMENTAL

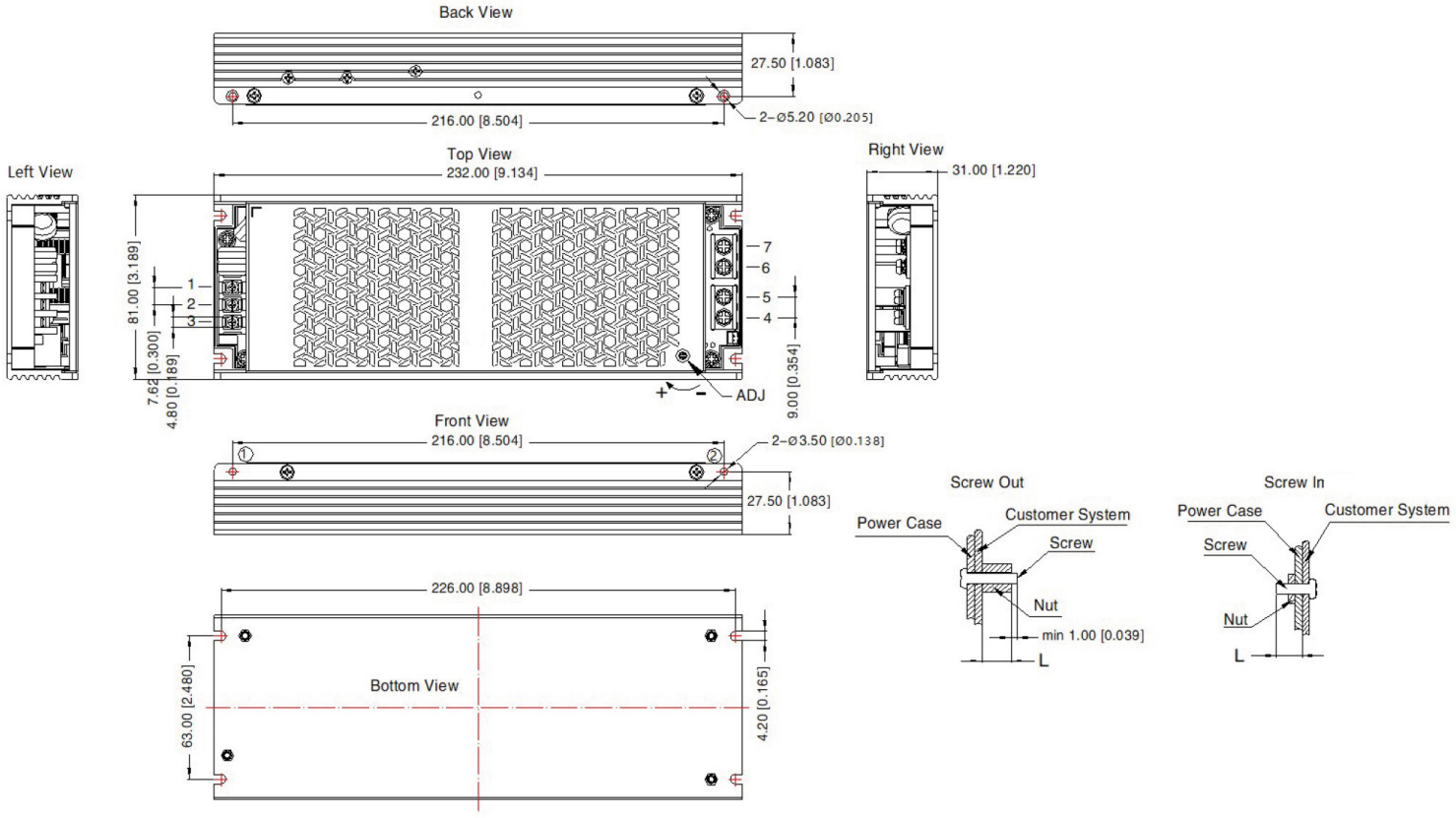
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		85	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	10		95	%

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	232.00 x 81.00 x 31.00				mm
weight			985		g
cooling	natural convection				
case material	metal (AL6063, SGCC)				

MECHANICAL DRAWING

units: mm [inches]
tolerance: ±1.00 [±0.039]
ADJ: Output voltage adjustment potentiometer
Wire range: 22~14 AWG
Tightening torque: M3, Max 0.5 N·m

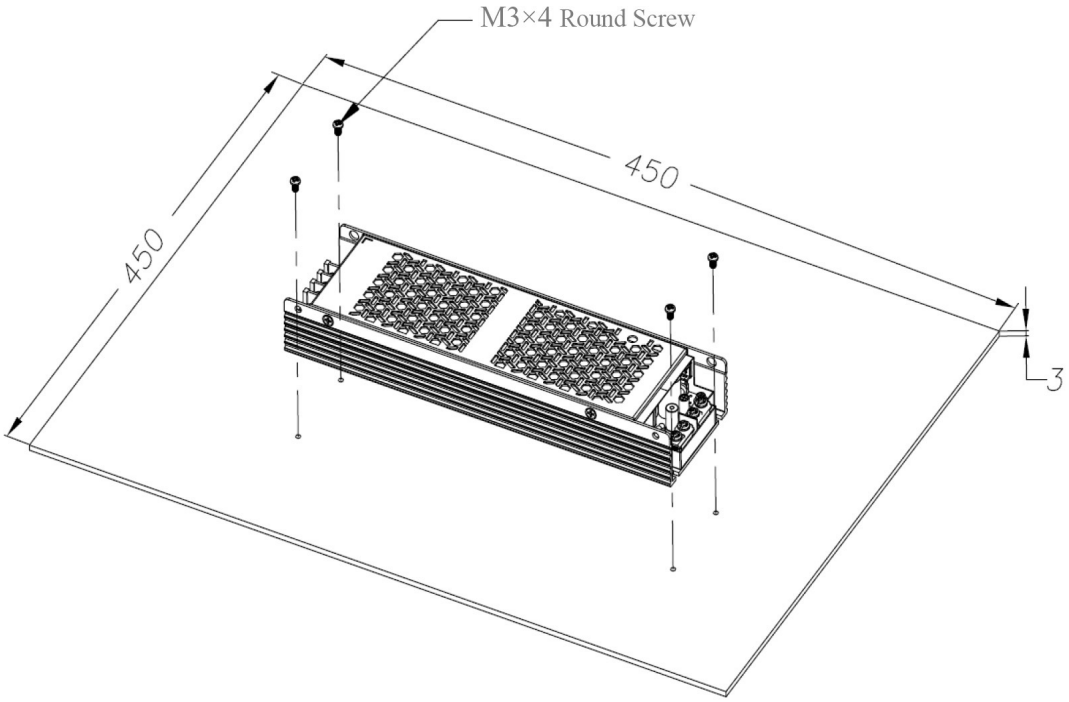


PIN OUT	
PIN	Function
1	⏚
2	AC (N)
3	AC (L)
4	+Vo
5	+Vo
6	-Vo
7	-Vo

Position	Installation Method	Screw Spec.	L (suggested)	Torque (max)
① ~②	screw out	M3	min. 10 mm	0.4 N·m
	screw in	M3	max. 8 mm	0.4 N·m

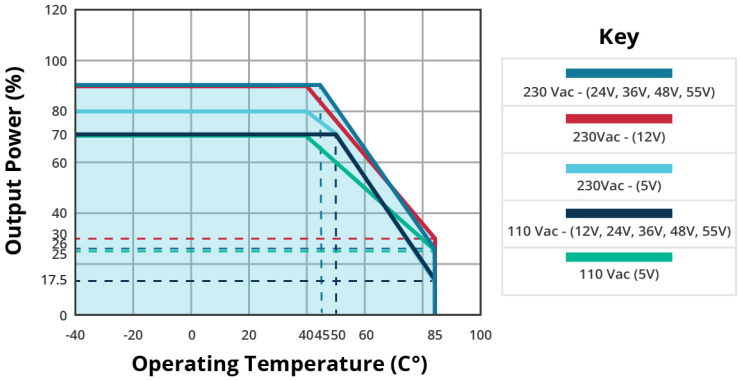
Note: 6. The out case needs to be connected to Protective Earth (⏚) of system when the terminal equipment in operating.

INSTALLATION DIAGRAM

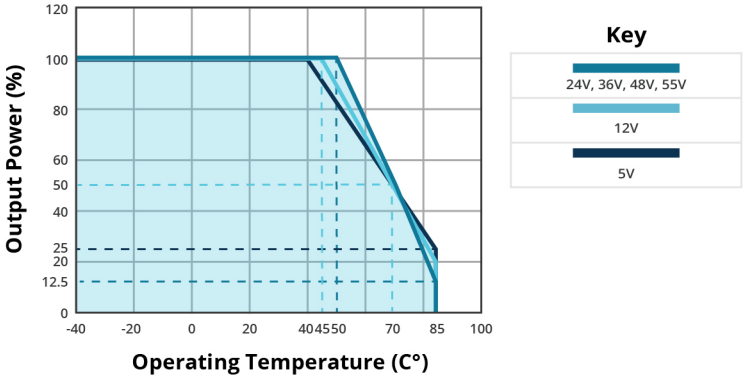


DERATING CURVES

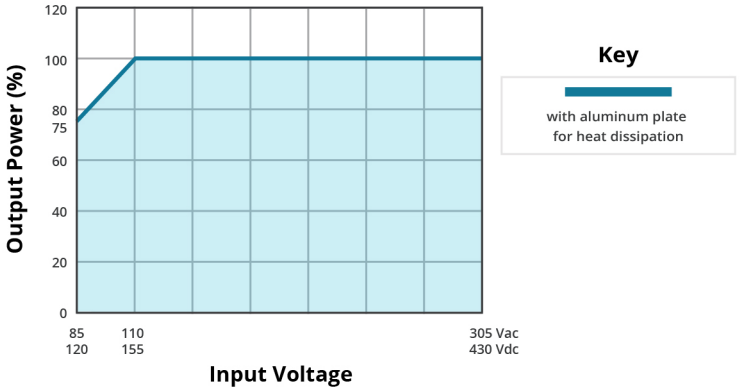
TEMPERATURE DERATING CURVE (Input Voltage: 85~305 Vac, 120~430 Vdc)



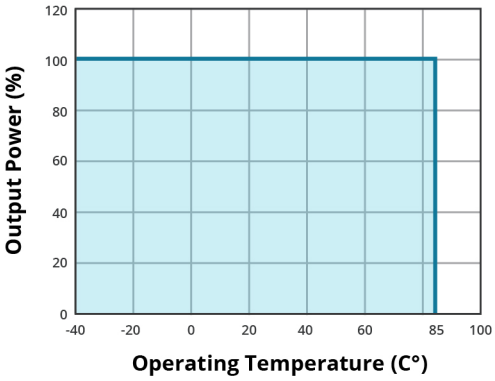
TEMPERATURE DERATING CURVE (Input Voltage: 85~305 Vac, 120~430 Vdc)



INPUT VOLTAGE DERATING CURVE (25°C)



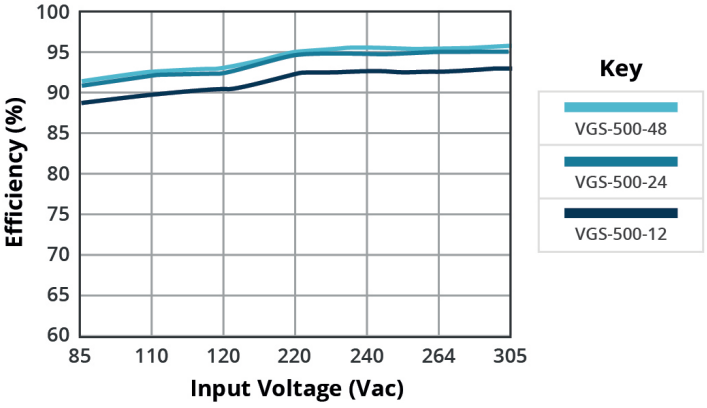
TEMPERATURE DERATING CURVE with base plate



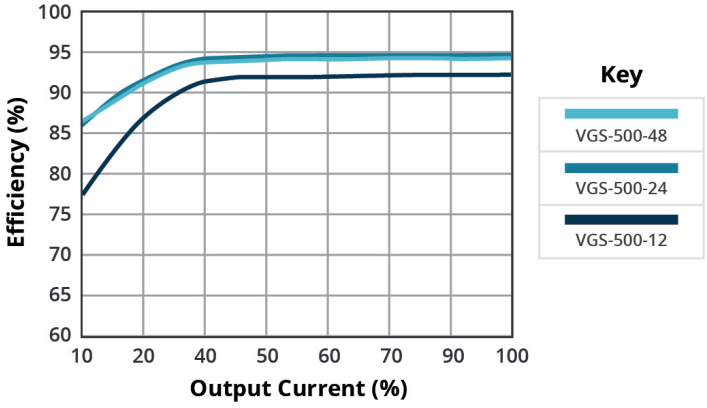
Note: 7. This product is suitable for applications using natural convection. For applications in closed enviroment please consult CUI.

EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE (full load)



EFFICIENCY VS OUTPUT CURRENT (Vin = 230 Vac)



REVISION HISTORY

rev.	description	date
1.0	initial release	11/22/2023

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

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