

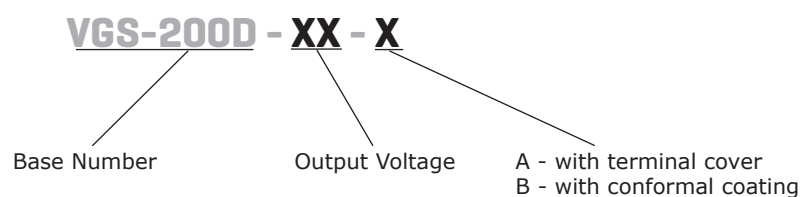
**SERIES: VGS-200D | DESCRIPTION: AC-DC POWER SUPPLY**
**FEATURES**

- 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 60335 and GB4943
- output over voltage, over current, over temperature, short circuit protection
- CISPR/EN55032 Class B radiated/conducted emissions



MODEL	output voltage		output current	output power	ripple and noise <sup>1</sup>	efficiency <sup>2</sup>
	typ (Vdc)	range (Vdc)	max (A)	max (W)	typ (mVp-p)	typ (%)
VGS-200D-5	5	4.5~5.5	40.0	200.0	150	85
VGS-200D-12	12	11.4~12.6	16.7	200.4	150	88
VGS-200D-15	15	14.25~15.75	13.4	201.0	150	88
VGS-200D-24	24	22.8~25.2	8.4	201.6	150	90
VGS-200D-48	48	45.6~50.4	4.2	201.6	240	89

Notes: 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.

**PART NUMBER KEY**


## INPUT

parameter	conditions/description	min	typ	max	units
voltage range	ac input	85		305	Vac
	dc input	120		430	Vdc
frequency range		47		63	Hz
current	at 115 Vac			3.0	A
	at 230 Vac			2.0	A
inrush current	at 115 Vac, cold start		35		A
	at 230 Vac, cold start		65		A
no load power consumption	at 230 Vac			1.0	W
power factor	at 115 Vac, full load		0.98		
	at 230 Vac, full load		0.95		

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 V model			3,000	μF
	12 V model			4,000	μF
	15 V model			3,300	μF
	24 V model			1,500	μF
	48 V model			470	μF
initial set point accuracy	5 V model, full load range		±2		%
	all other models, full load range		±1		%
line regulation	rated load		±0.5		%
load regulation	5 V model at 230 Vac, 0~100% load		±1		%
	all other models at 230 Vac, 0~100% load		±0.5		%
hold-up time	at 115 Vac, full load		8		ms
	at 230 Vac, full load		8		ms

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery	105		200	%
over voltage protection	5 V model, auto recovery, hiccup			7.0	Vdc
	12 V model, output shut down, latching			16.2	Vdc
	15 V model, output shut down, latching			21.8	Vdc
	24 V model, output shut down, latching			32.4	Vdc
	48 V model, output shut down, latching			60.0	Vdc
short circuit protection	continuous, auto recovery, hiccup				
over temperature protection	protection activation, full load			85	°C
	protection deactivation	55			°C

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, 1 min, <10 mA	4,000			Vac
	input to ground, 1 min, <10 mA	2,000			Vac
	output to ground, 1 min, <10 mA	500			Vac
safety approvals	certified to 62368: IEC, EN, UL designed to meet 60335: IEC, EN (excludes 5 V model) designed to meet 4943: GB				
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				

**SAFETY & COMPLIANCE (CONTINUED)**

parameter	conditions/description	min	typ	max	units
radiated immunity	IEC/EN61000-4-3 10V/m, perf. Criteria A				
EFT/burst	IEC/EN61000-4-4 ±4KV, perf. Criteria A, (5 V model: +/- 2KV, perf. Criteria A)				
surge	5 V model: IEC/EN61000-4-5 ±1KV/±2KV, perf. Criteria A all other models: IEC/EN61000-4-5 ±2KV/±4KV, perf. Criteria A				
conducted immunity	IEC/EN61000-4-6 10Vr.m.s, perf. Criteria A				
voltage dips and interruption	IEC/EN61000-4-11 0%, 70%, perf. Criteria B				
RoHS compliant	yes				
MTBF	as per MIL-HDBK-217F at 25 °C	250,000			hrs

Note: One magnetic bead (nickel-zinc ferrite) should be coupled with the output load line during conducted/radiated emissions testing.

**ENVIRONMENTAL**

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-30		70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	10		95	%
temperature coefficient	0 ~ 45 °C		0.03		%/°C

**MECHANICAL**

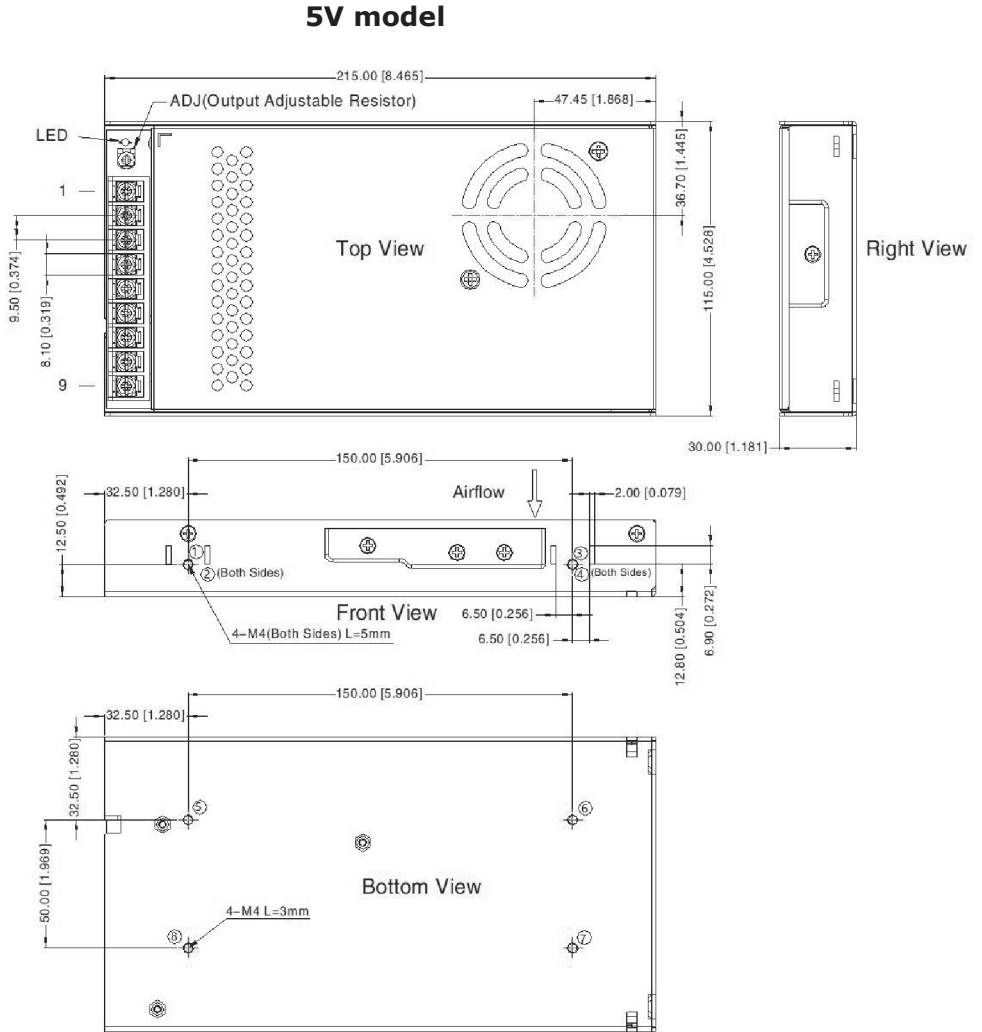
parameter	conditions/description	min	typ	max	units
dimensions	5V model: 215.00 x 115.00 x 30.00 all other models: 179.00 x 99.00 x 30.00				mm mm
weight	5V model all other models		750 475		g g
cooling	natural convection				
case material	metal (AL1100)				

## MECHANICAL DRAWING

units: mm [inches]  
 tolerance:  $\pm 1.00$  [ $\pm 0.039$ ]  
 wire range: 22~12 AWG  
 connector tightening torque: M3.5, 0.8 N·m

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

Note: At least one position ①~⑧ must be securely connected to the GND. ⊕



Position	Screw Spec.	L (max)	Torque (max)
① ~ ④	M4	5 mm	0.9 N·m
⑤ ~ ⑧	M4	3 mm	0.9 N·m

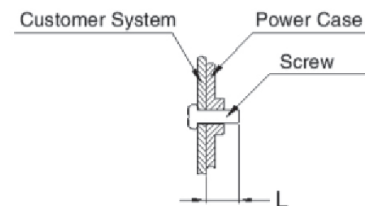
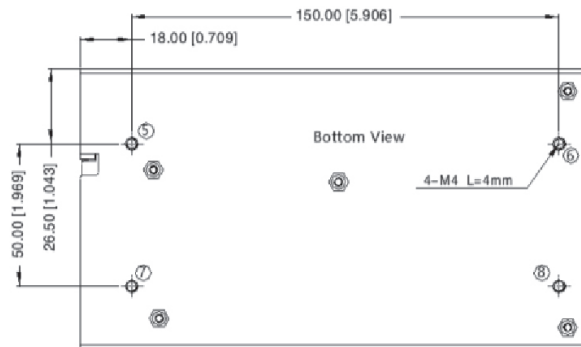
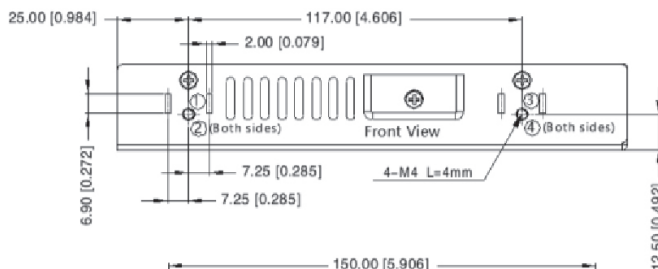
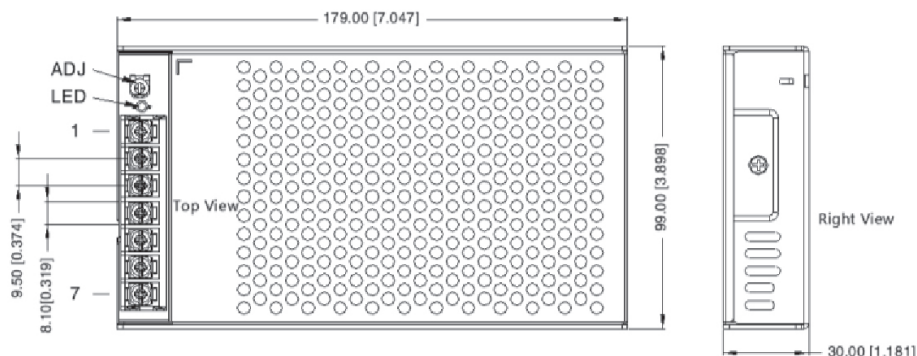
## MECHANICAL DRAWING

units: mm [inches]  
 tolerance:  $\pm 1.00$  [ $\pm 0.039$ ]  
 wire range: 22~12 AWG  
 connector tightening torque: M3.5, 0.8 N·m

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

Note: At least one position ①~⑧ must be securely connected to the GND.

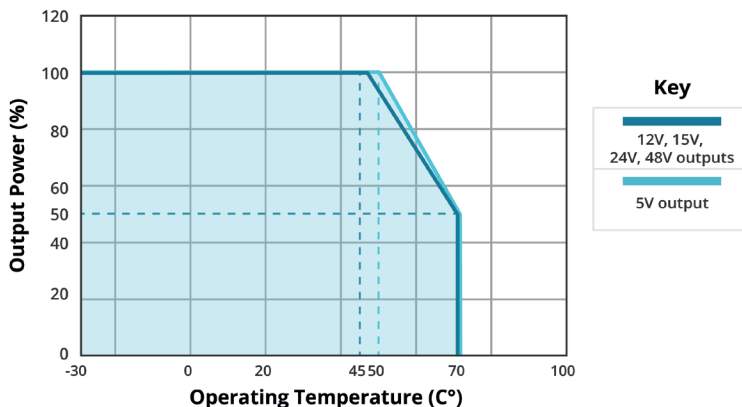
### 12V, 15V, 24V, 48V models



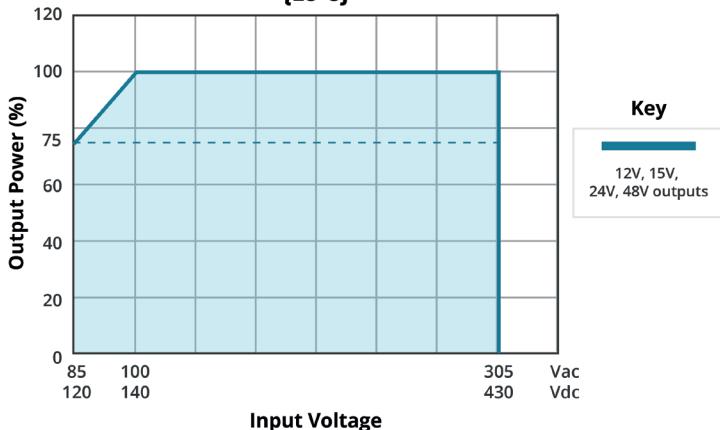
Position	Screw Spec.	L (max)	Torque (max)
① ~ ⑧	M4	4 mm	0.9 N·m

## DERATING CURVES

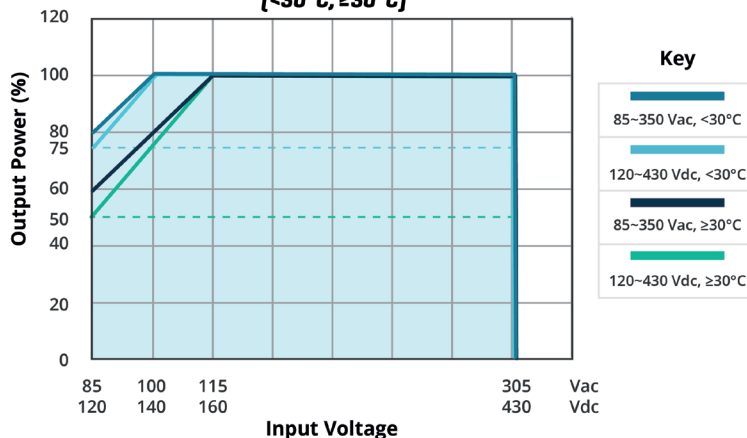
TEMPERATURE DERATING CURVE



INPUT VOLTAGE DERATING CURVE  
12V, 15V, 24V, 48V models  
[25°C]

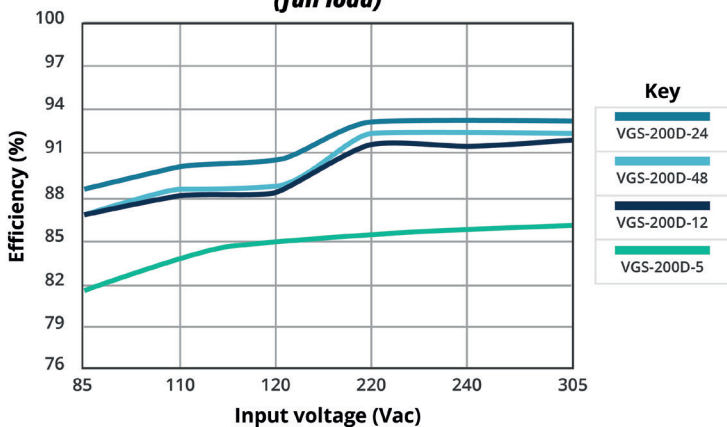


INPUT VOLTAGE DERATING CURVE  
5V model  
[<30°C, ≥30°C]

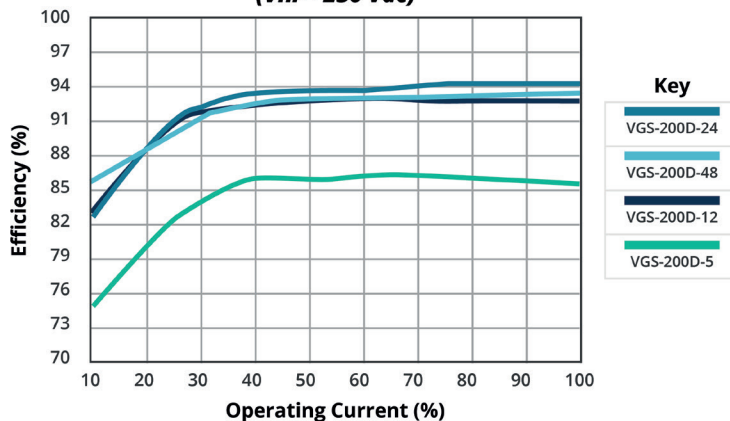


## EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE  
(full load)



EFFICIENCY VS OUTPUT LOAD  
(Vin = 230 Vac)



## REVISION HISTORY

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rev.	description	date
1.0	initial release	03/09/2021
1.01	derating and efficiency curves updated	01/31/2022
1.02	UKCA mark added	06/10/2022

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



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