

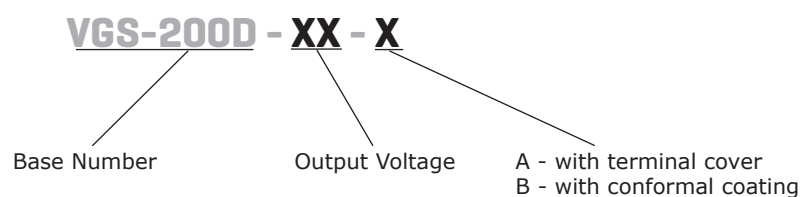
SERIES: VGS-200D | DESCRIPTION: AC-DC POWER SUPPLY
FEATURES

- 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 ¹	efficiency ²
	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

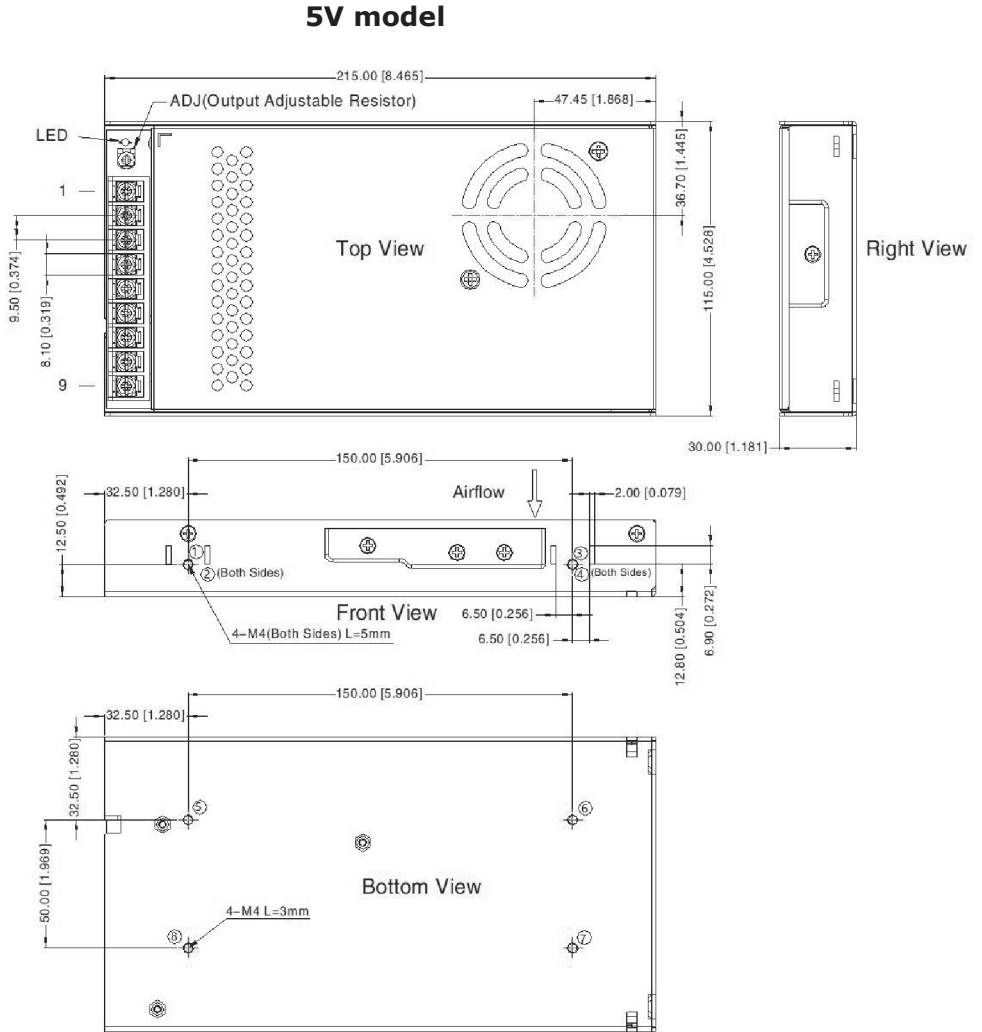
parameter	conditions/description	min	typ	max	units
dimensions	5V model: 215.00 x 115.00 x 30.00 all other models: 179.00 x 99.00 x 30.00				mm mm
weight	5V model all other models		750 475		g g
cooling	natural convection				
case material	metal (AL1100)				

MECHANICAL DRAWING

units: mm [inches]
 tolerance: ± 1.00 [± 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

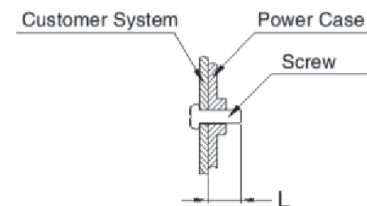
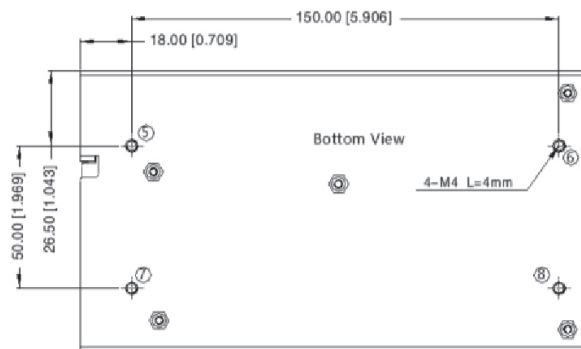
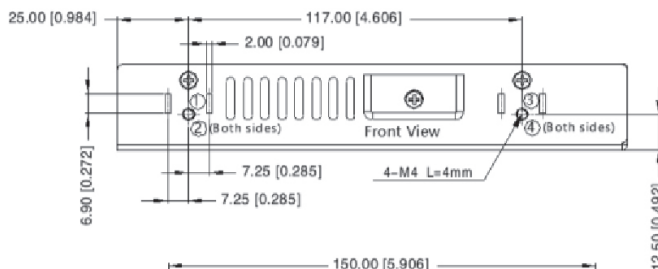
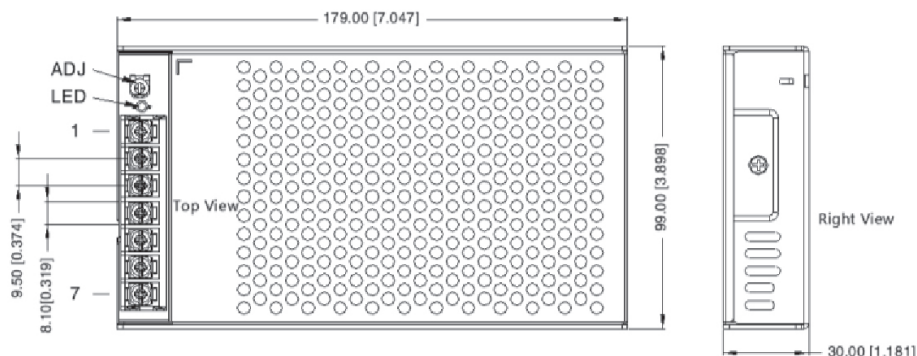
MECHANICAL DRAWING

units: mm [inches]
 tolerance: ± 1.00 [± 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. 

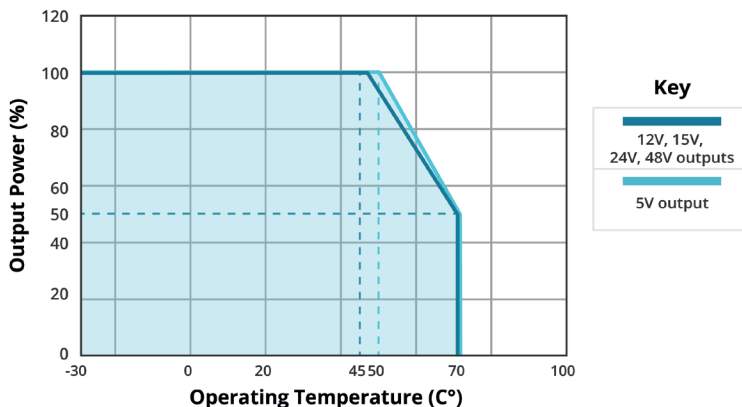
12V, 15V, 24V, 48V models



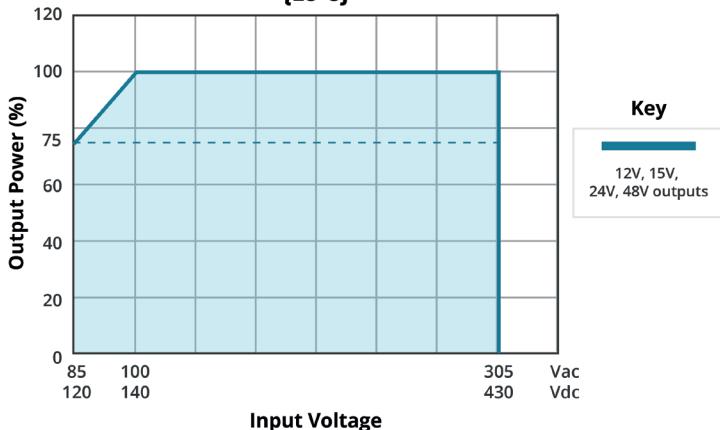
Position	Screw Spec.	L (max)	Torque (max)
① ~ ⑧	M4	4 mm	0.9 N·m

DERATING CURVES

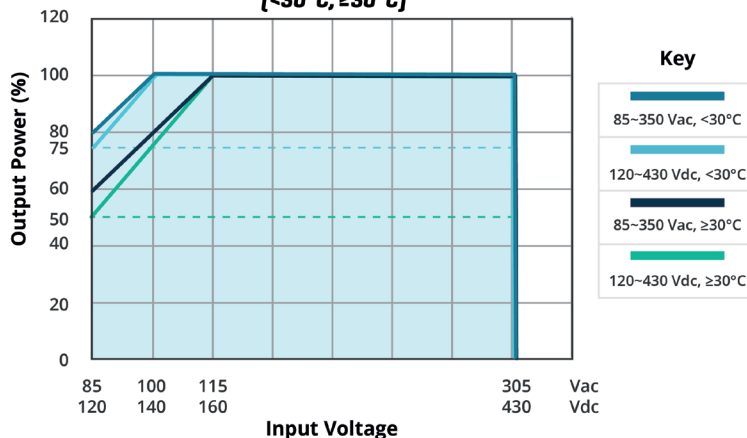
TEMPERATURE DERATING CURVE



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

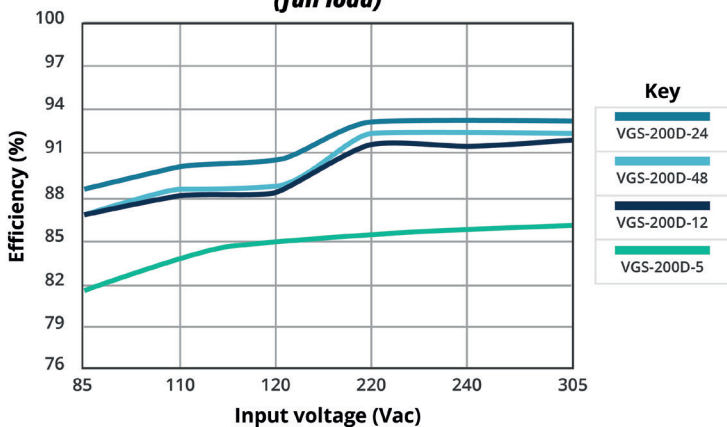


INPUT VOLTAGE DERATING CURVE
5V model
[<30°C, ≥30°C]

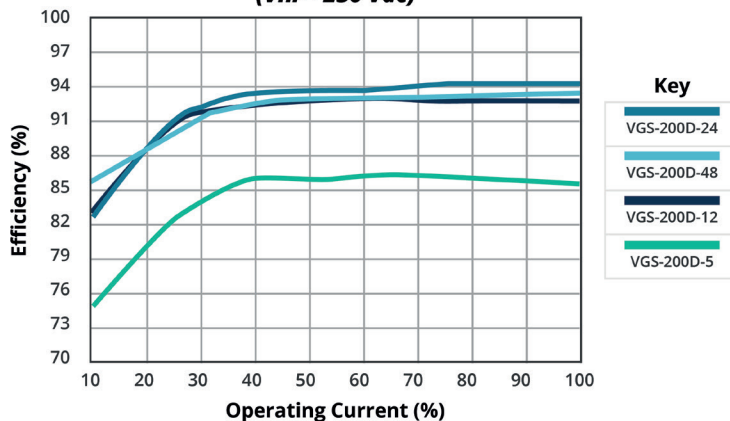


EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE
(full load)



EFFICIENCY VS OUTPUT LOAD
(Vin = 230 Vac)



REVISION HISTORY

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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