

**SERIES:** VGS-150C | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

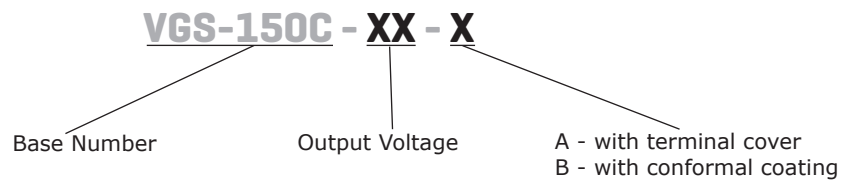
**FEATURES**

- universal input range (85 ~ 264 VAC)
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558, IEC/EN 60335, and GB4943 system requirements
- short-circuit, over-current, over-voltage, over-temperature protections
- input over voltage category III for fixed installations (under 2,000 m altitude)
- CISPR/EN55032 Class B radiated/conducted emissions
- output adjustable via trimpot +/- 10%



MODEL	output voltage	output current	output power	ripple and noise <sup>1</sup>	efficiency <sup>2</sup>
	(Vdc)	max (A)	max (W)	typ (mVp-p)	typ (%)
VGS-150C-12	12	12.5	150.0	150	86
VGS-150C-15	15	10.0	150.0	150	87
VGS-150C-24	24	6.5	156.0	200	88
VGS-150C-36	36	4.3	154.8	200	88
VGS-150C-48	48	3.3	158.4	200	89

Notes: 1. Ripple & noise are measured at 20 MHz BW with 47  $\mu$ F aluminum electrolytic capacitor and 0.1  $\mu$ F ceramic capacitor on the output.  
 2. Measured at 230 Vac

**PART NUMBER KEY**


## INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input	85		264	Vac
	dc input	120		373	Vdc
frequency		47		63	Hz
current	at 115 Vac			4	A
	at 230 Vac			2	A
inrush current	at 115 Vac, cold start		30		A
	at 230 Vac, cold start		60		A
leakage current	at 240 Vac			0.75	mA
no load power consumption				0.5	W

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	12 Vdc output			10,000	μF
	15 Vdc output			6,000	μF
	24 Vdc output			2,400	μF
	36 Vdc output			1,200	μF
	48 Vdc output			600	μF
initial set point accuracy	at full load		±1		%
line regulation			±0.5		%
load regulation	0%~100% load		±0.5		%
adjustability	built in trim pot	±10			%
hold-up time	at 115 Vac	8			ms
	at 230 Vac	16			ms
switching frequency			65		kHz
temperature coefficient			±0.05		%/°C

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	12 Vdc output, output shut-down, restart required to recover			16.2	Vdc
	15 Vdc output, output shut-down, restart required to recover			21.75	Vdc
	24 Vdc output, output shut-down, restart required to recover			33.6	Vdc
	36 Vdc output, output shut-down, restart required to recover			48.6	Vdc
	48 Vdc output, output shut-down, restart required to recover			60.0	Vdc
over current protection	auto-recovery	110		150	%
short circuit protection	hiccup, continuous, auto-recovery				
over temperature protection	auto-recovery				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to ground	2,000			Vac
	input to output	4,000			Vac
	output to ground	1,250			Vac
safety approvals	certified to:	62368:	IEC/EN/UL		
	designed to meet:	60335:	IEC/EN		
	designed to meet:	61558:	IEC/EN		
	designed to meet:	4943:	GB		
safety class	Class I				
EMI/EMC	CISPR32/EN55032 Class B, IEC/EN61000-3-2 Class A (≤80% load)				
ESD	IEC/EN 61000-4-2 Contact ±6KV /Air ±8KV, perf. Criteria A				
radiated immunity	IEC/EN 61000-4-3 10V/m, perf. Criteria A				
EFT/burst	IEC/EN 61000-4-4 ±4KV, perf. Criteria A				
surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV, perf. Criteria A				
conducted immunity	IEC/EN61000-4-6 10 Vr.m.s, perf. Criteria A				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
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		-30		70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	10		95	%

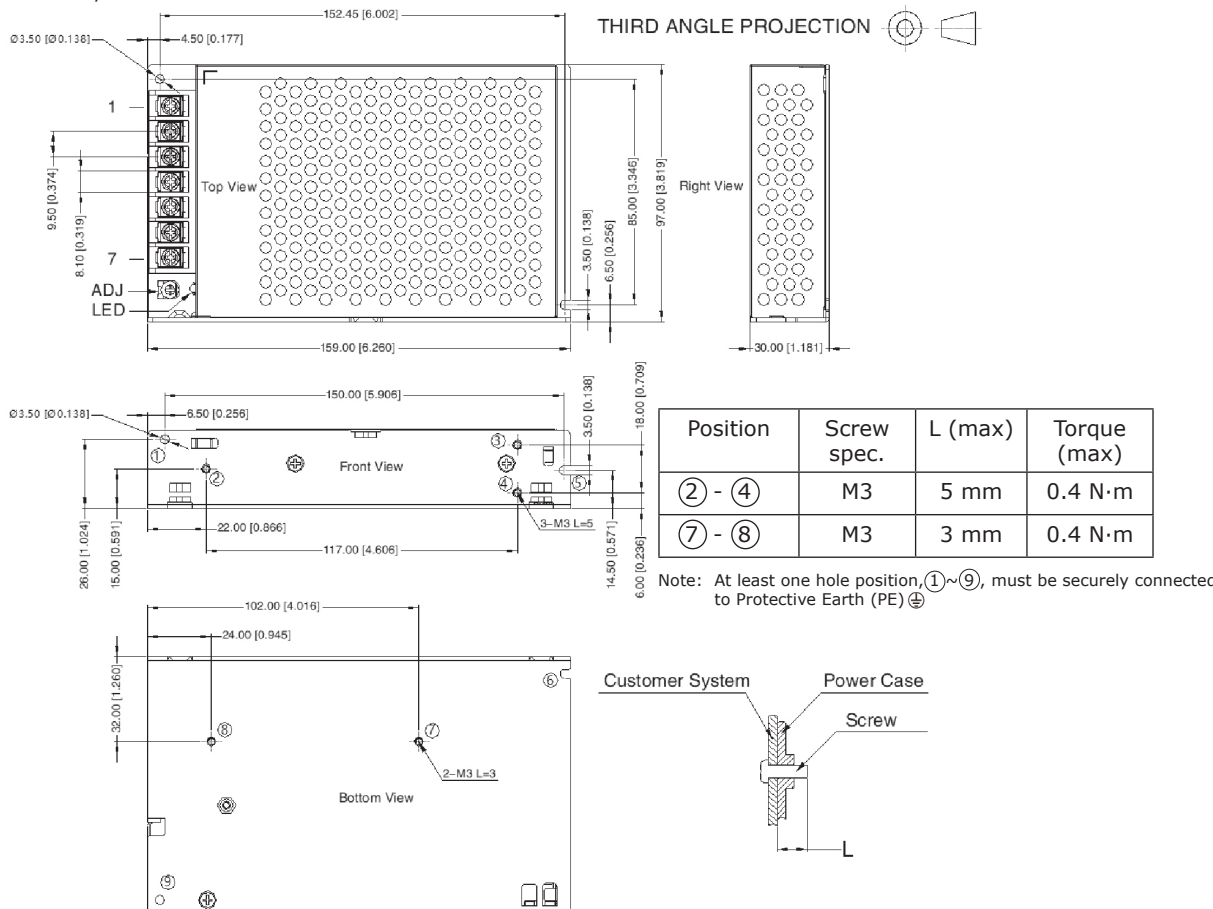
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	159.00 x 97.00 x 30.00				mm
weight			410		g
cooling	natural convection				
case material	metal (AL1100, SGCC)				

## MECHANICAL DRAWING

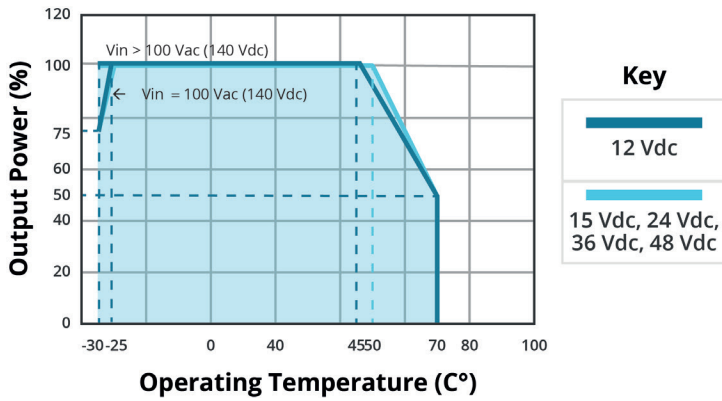
units: mm [inch]  
 tolerance: ±1.0 [±0.039]  
 wire range: 22-12 AWG  
 connector tightening torque: M3.5, 0.8 N·m

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

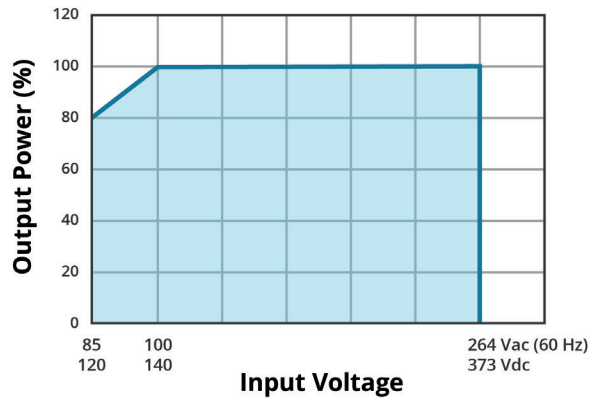


## DERATING CURVE

**TEMPERATURE DERATING CURVE**

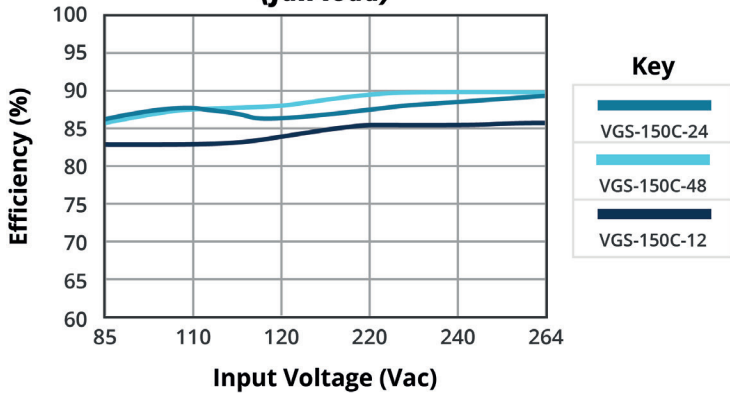


**INPUT VOLTAGE DERATING CURVE (25°C)**

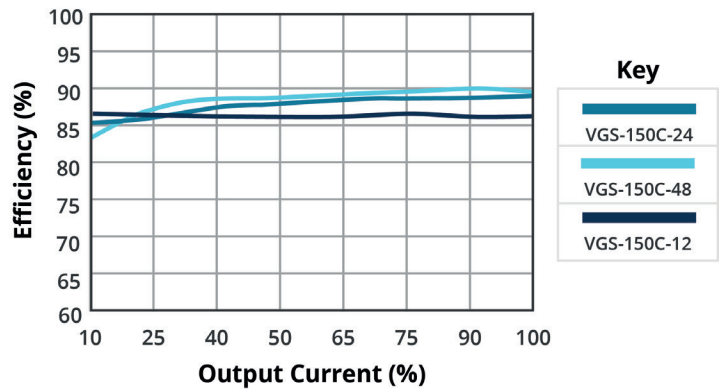


## EFFICIENCY CURVES

**EFFICIENCY VS INPUT VOLTAGE (full load)**



**EFFICIENCY VS OUTPUT LOAD**



## REVISION HISTORY

rev.	description	date
1.0	initial release	09/28/2020
1.01	over temperature protection added to protections section	04/06/2021
1.02	derating and efficiency curves updated	02/02/2022
1.03	OVP and derating curve updated	05/12/2022
1.04	UKCA mark added	06/06/2022
1.05	features updated	01/09/2024

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



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