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

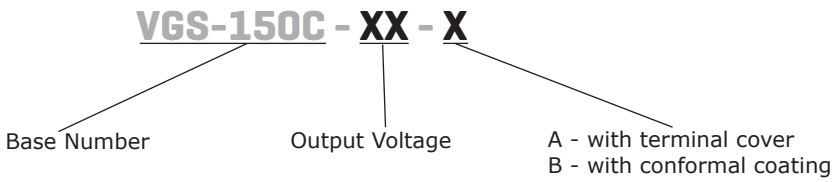
FEATURES

- 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 (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] typ (mVp-p)	efficiency[2] 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 µF aluminum electrolytic capacitor and 0.1 µF ceramic capacitor on the output.
2. Measured at 230 Vac

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input dc input	85 120		264 373	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			4 2	A A
inrush current	at 115 Vac, cold start at 230 Vac, cold start		30 60		A 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 15 Vdc output 24 Vdc output 36 Vdc output 48 Vdc output			10,000 6,000 2,400 1,200 600	µF µF µF µF 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 at 230 Vac	8 16			ms 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 15 Vdc output, output shut-down, restart required to recover 24 Vdc output, output shut-down, restart required to recover 36 Vdc output, output shut-down, restart required to recover 48 Vdc output, output shut-down, restart required to recover			16.2 21.75 33.6 48.6 60.0	Vdc Vdc Vdc Vdc 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 input to output output to ground	2,000 4,000 1,250			Vac Vac 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	%

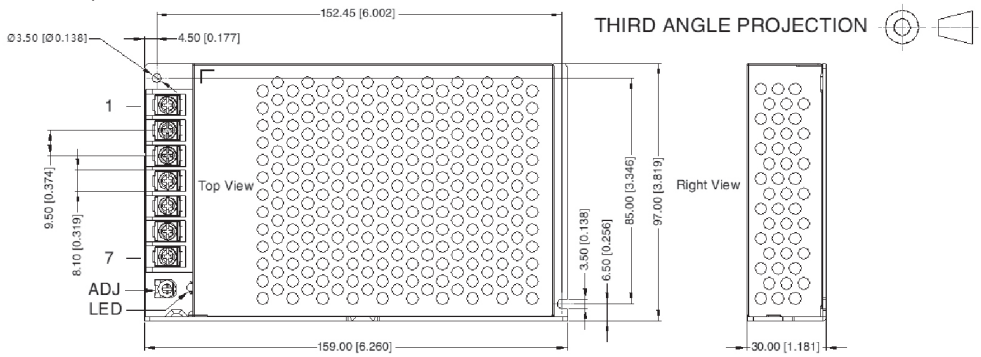
MECHANICAL

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

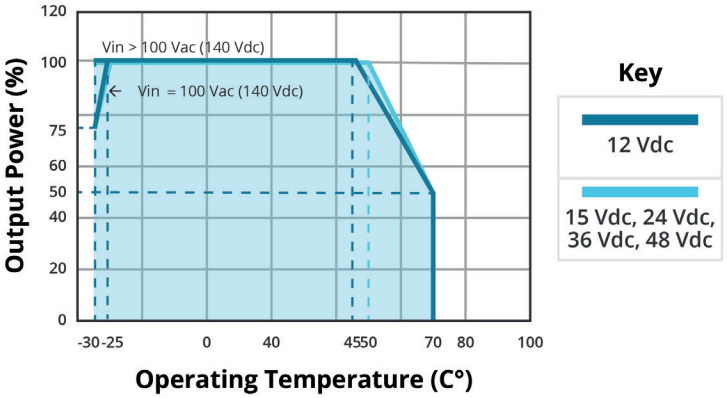


Position	Screw spec.	L (max)	Torque (max)
② - ④	M3	5 mm	0.4 N·m
⑦ - ⑧	M3	3 mm	0.4 N·m

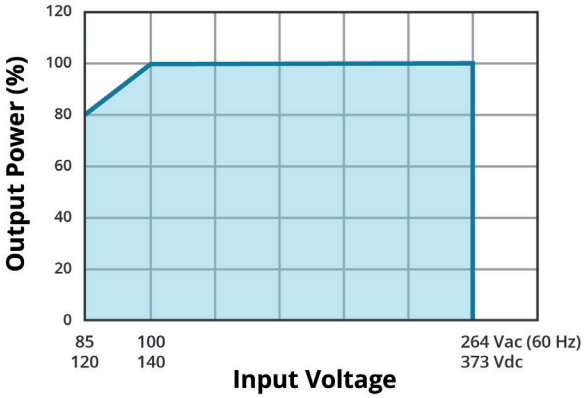
Note: At least one hole position, ①~⑨, must be securely connected to Protective Earth (PE) ⏚

DERATING CURVE

TEMPERATURE DERATING CURVE

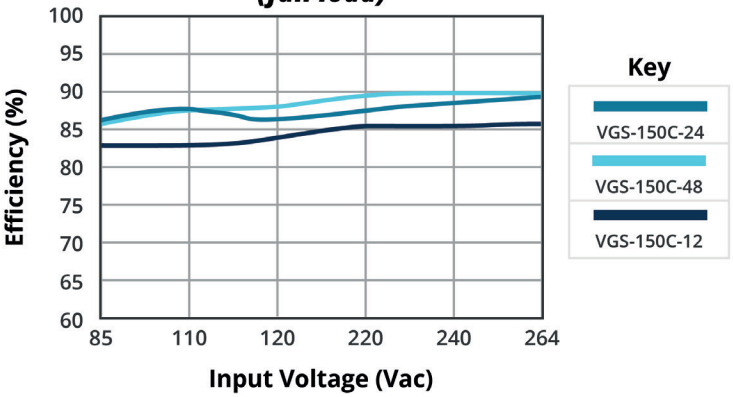


INPUT VOLTAGE DERATING CURVE (25°C)

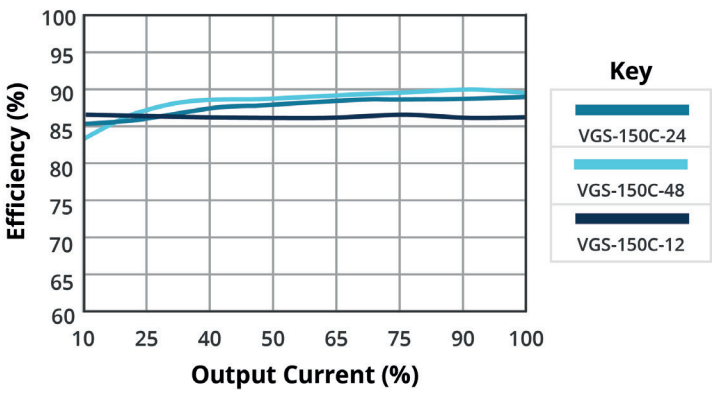


EFFICIENCY CURVES

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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