CUI INC
a bel group

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

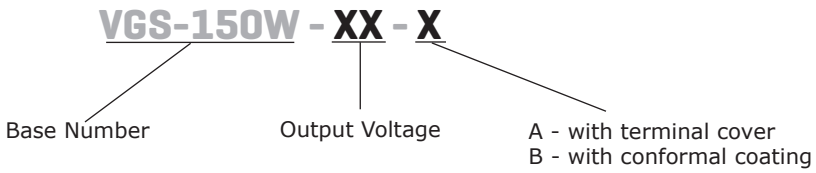
FEATURES

- wide input range (85 ~ 305 VAC)
- available with conformal coating or terminal cover options
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558 and IEC/EN 60335 system requirements
- short-circuit, over-current, over-voltage protections
- input over voltage category III for fixed installations (under 2,000 m altitude)
- CISPR/EN55032 Class B radiated/conducted emissions

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] typ (mVp-p)	efficiency[2] typ (%)
VGS-150W-12	12	12.5	150	150	86
VGS-150W-15	15	10.0	150	150	87
VGS-150W-24	24	6.5	156	200	88
VGS-150W-36	36	4.3	154	200	88
VGS-150W-48	48	3.3	158	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		305 431	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			4 2	A A
inrush current	at 115 Vac at 230 Vac		30 60		A A
leakage current	at 277 Vac			0.75	mA
no load power consumption	at 250 Vac			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	at rated load		±0.5		%
load regulation	0% ~ 100% load		±0.5		%
hold-up time	at 115 Vac at 230 Vac	8 40			ms ms
switching frequency			65		kHz
temperature coefficient			±0.03		%/°C
adjustability	built in trim pot		±10		%

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	12 Vdc output, hiccup 15 Vdc output, hiccup 24 Vdc output, hiccup 36 Vdc output, hiccup 48 Vdc output, hiccup			16.2 21.75 33.6 48.6 60	Vdc Vdc Vdc Vdc Vdc
over current protection	auto recovery	110		150	%
short circuit protection	hiccup, continuous, auto recovery				
over-temperature protection	shut-down, auto recovery				°C

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to ground, 1 min. <10mA input to output, 1 min. <10mA output to ground, 1 min. <10mA	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				
safety class	class I				
EMI/EMC	CISPR 32/EN 55032 Class B, IEC 61000-3-2 Class A (≤80% load)				
ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV perf. criteria A				
radiated immunity	IEC/EN 61000-4-3 10 V/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				

SAFETY & COMPLIANCE

conducted immunity	IEC/EN 61000-4-6 10 Vr.m.s perf. criteria A		
voltage dips and interuption	IEC/EN 61000-4-11 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

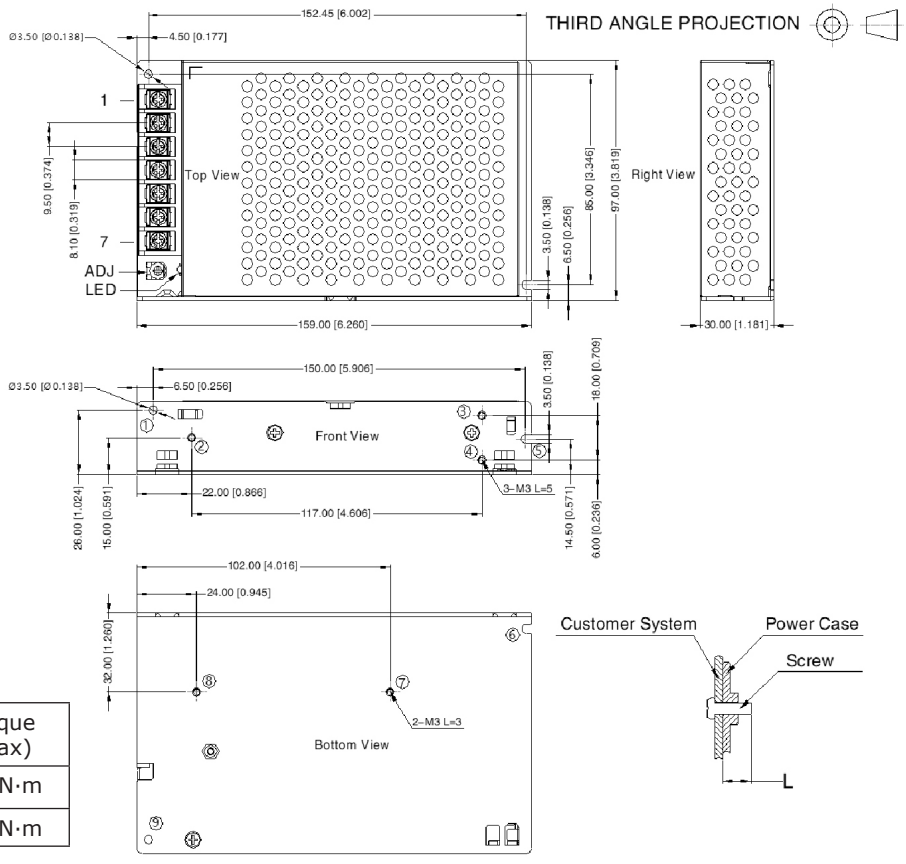
parameter	conditions/description	min	typ	max	units
dimensions	159.00 x 97.00 x 30.00 mm				inch
weight	12V, 15V models 24V, 36V, 48V models		430 410		g g
cooling	free air convection				
case material	metal (AL1100, SGCC)				

MECHANICAL DRAWING

units: mm
tolerance: ±1 [±0.039]

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

wire range: 22-12 AWG
connector tightening torque: M3.5, 0.8N·m

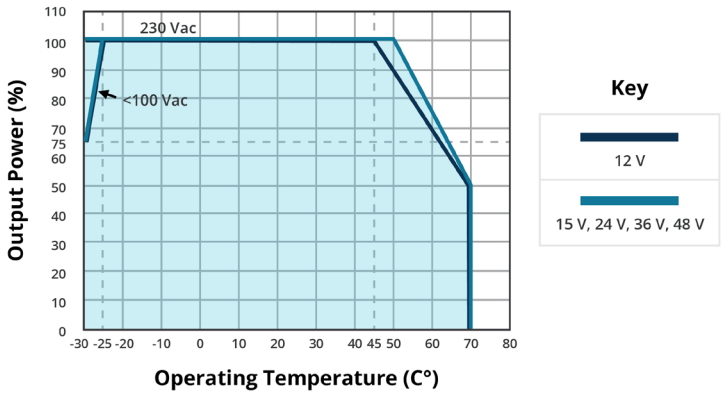


Position	Screw spec.	L (max)	Torque (max)
② - ④	M3	5 mm	0.4 N·m
⑦ - ⑧	M3	3 mm	0.4 N·m

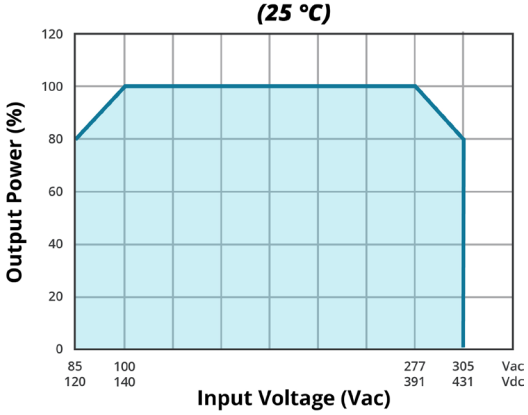
Note: At least one hole position, ①~⑨ must be securely connected to Protective Earth (PE) ⏚

DERATING CURVE

TEMPERATURE DERATING CURVE

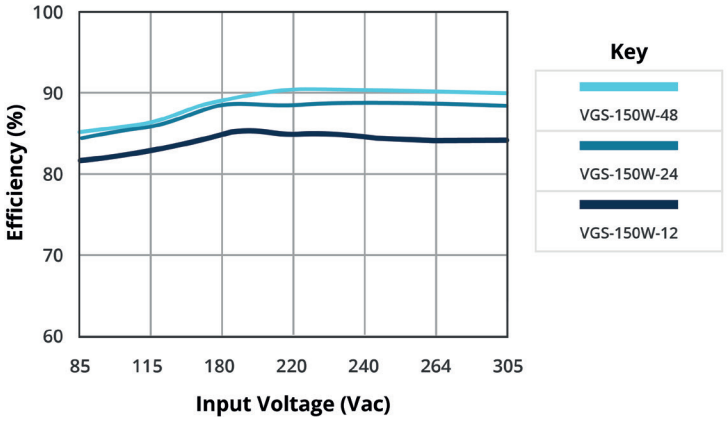


INPUT VOLTAGE DERATING CURVE (25 °C)

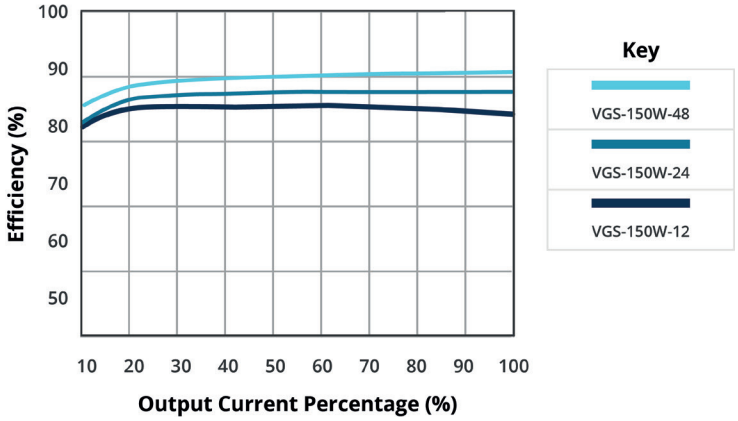


EFFICIENCY CURVES

EFFICIENCY VS INPUT LOAD (full load)



EFFICIENCY VS OUTPUT LOAD (at 230 Vac)



REVISION HISTORY

rev.	description	date
1.0	initial release	09/02/2020
1.01	derating and efficiency curves updated	06/14/2021
1.02	screw length table updated	12/09/2021
1.03	UKCA mark added	06/13/2022
1.04	derating curve updated	09/04/2022
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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