CUI INC
a bel group

SERIES: VGS-35W | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

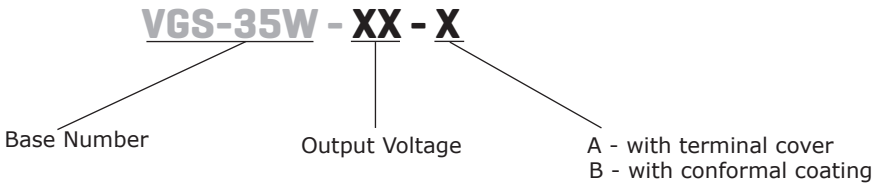
FEATURES

- 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
- 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-35W-5	5	7.0	35	80	81
VGS-35W-12	12	3.0	36	120	85
VGS-35W-15	15	2.4	36	120	86
VGS-35W-24	24	1.5	36	150	87

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		305 430	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			0.8 0.6	A
inrush current	at 115 Vac, cold start at 230 Vac, cold start		30 50		A
leakage current				0.75	mA
no load power consumption				0.3	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output 12 Vdc output 15 Vdc output 24 Vdc output			8,000 1,500 1,000 750	µF µF µF µF
initial set point accuracy	5 Vdc output, full load other outputs, full load		±2 ±1		% %
line regulation	rated load		±0.5		%
load regulation	0% ~ 100% 5 Vdc output 0% ~ 100% other outputs		±1 ±0.5		% %
hold-up time	at 115 Vac at 230 Vac	8 30			ms ms
switching frequency			65		kHz
adjustability	built in trim pot		±10		%
temperature coefficient			±0.03		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output, hiccup, auto recovery 12 Vdc output, hiccup, auto recovery 15 Vdc output, hiccup, auto recovery 24 Vdc output, hiccup, auto recovery			6.3 16.2 21.75 33.6	Vdc Vdc Vdc Vdc
over current protection	at 230 Vac, auto recovery	110		200	%
short circuit protection	hiccup, continuous, auto recovery				

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/EN 61000-3-2 class A				
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 ±2KV perf. criteria A				
surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV perf. criteria A				
conducted immunity	IEC/EN 61000-4-6 10 Vr.m.s perf. criteria A				
voltage dips and interruption	IEC/EN 61000-4-11 0%, 70% perf. criteria B				

SAFETY & COMPLIANCE

MTBF	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			95	%

MECHANICAL

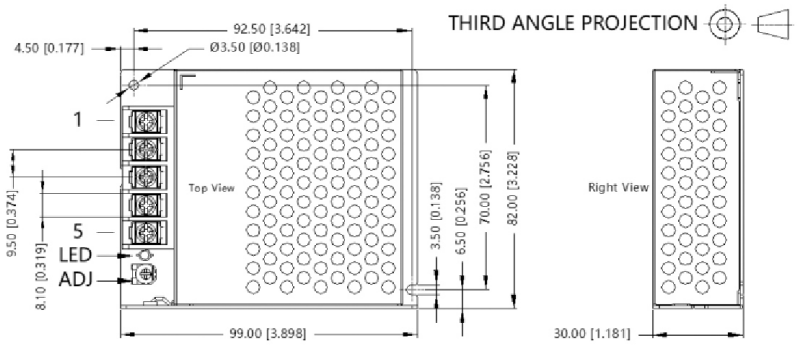
parameter	conditions/description	min	typ	max	units
dimensions	99.00 x 82.00 x 30.00 mm				inch
weight			170		g
cooling	free air convection				
case material	Metal (AL1100, SGCC)				

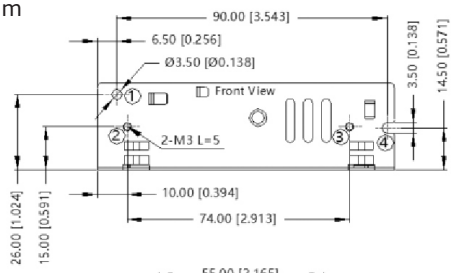
MECHANICAL DRAWING

units: mm
tolerance: ±1 [±0.039]

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

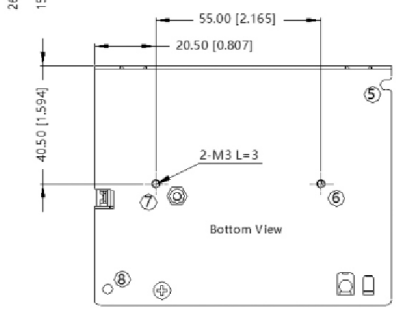
wire range: 22-12 AWG
connector tightening torque: M3.5, 0.8 N·m

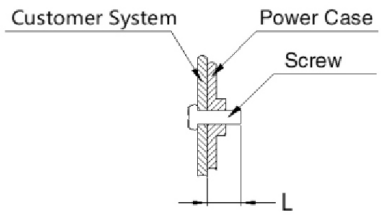




Position	Screw spec.	L (max)	Torque (max)
② - ③	M3	5 mm	0.4 N·m
⑥ - ⑦	M3	3 mm	0.4 N·m

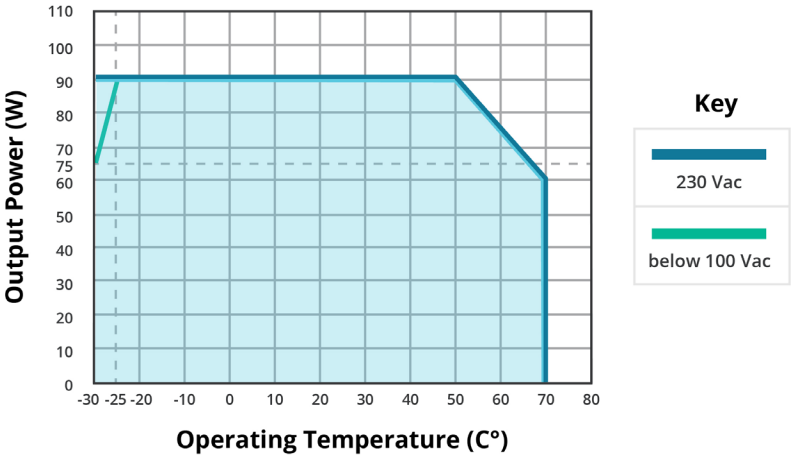
Note: At least one hole position, ①~⑧ must be securely connected to Protective Earth (PE)⏚



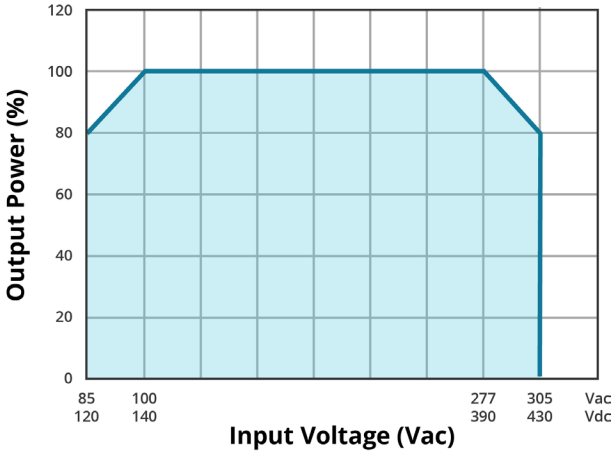


DERATING CURVE

TEMPERATURE DERATING CURVE

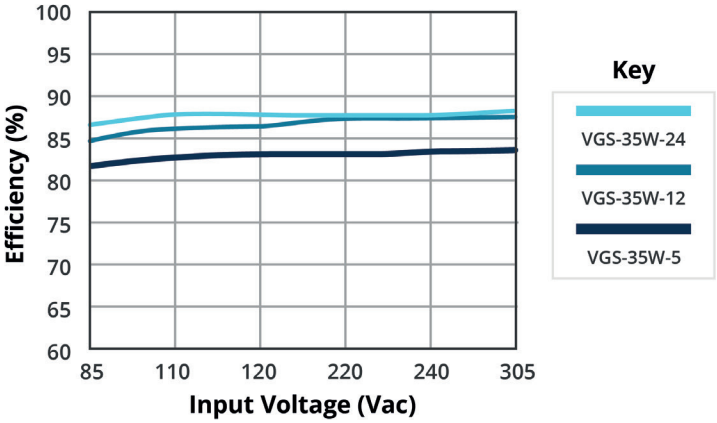


INPUT VOLTAGE DERATING CURVE (25 °C)

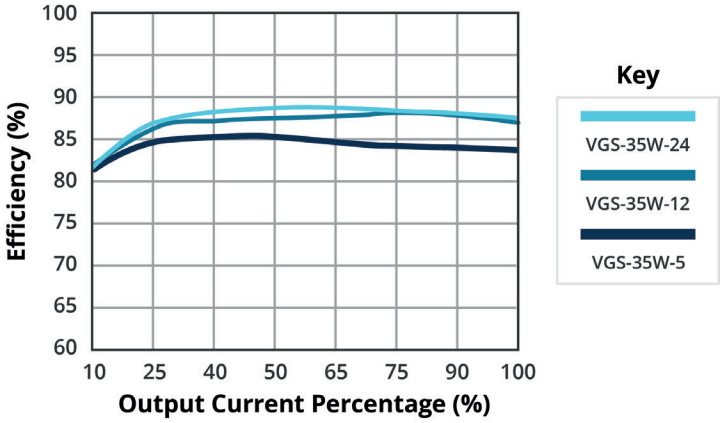


EFFICIENCY CURVES

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	added adjustability line	10/12/2020
1.02	derating and efficiency curves updated	06/04/2021
1.03	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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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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