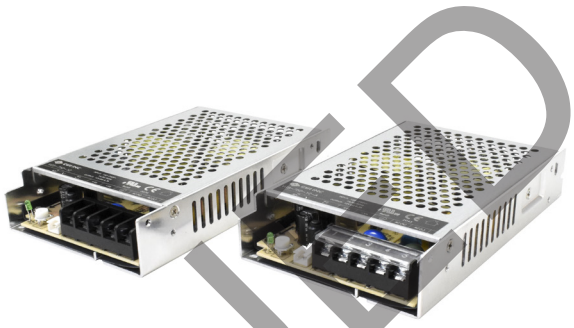
CUI INC
a bel group

SERIES: VGS-75D | DESCRIPTION: INTERNAL AC-DC POWER SUPPLY

FEATURES

- available with conformal coating or terminal cover options
- active Power Factor Correction (PFC)
- certified to IEC/EN/UL 62368
- designed to meet IEC/EN 61558, IEC/EN 60335, and GB4943
- output over voltage, over current, over temperature, short circuit protection
- CISPR/EN55032 Class B radiated/conducted emissions
- input over voltage category III for fixed installations
- 300 VAC surge resilience (5 seconds)



MODEL

MODEL	output voltage (Vdc)	output voltage range[1] (Vdc)	output current max (A)	output power max (W)	ripple and noise[2] max (mVp-p)	efficiency[3] typ (%)
VGS-75D-5[4]	5	4.75 ~ 5.5	15.0	75.0	120	82
VGS-75D-12	12	11.4 ~ 13.2	6.3	75.6	120	85
VGS-75D-15	15	14.3 ~ 16.5	5.0	75.0	120	86
VGS-75D-24	24	22.8 ~ 26.4	3.2	76.8	120	87
VGS-75D-48	48	45.6 ~ 52.8	1.6	76.8	200	89

Notes:
1. Output adjustable via built-in trimpot. The actual adjustment range may extend beyond the values listed and care should be taken to ensure the output voltage and output power do not exceed stated limits.
2. Ripple & noise are measured at 20 MHz BW with 47 µF aluminum electrolytic capacitor and 0.1 µF ceramic capacitor on the output.
3. Measured at 230 Vac.
4. Discontinued model - with terminal cover option

PART NUMBER KEY

VGS-75D - XX - X

- VGS-75D: Base Number
- XX: Output Voltage
- X: A - with terminal cover; B - with conformal coating

INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input dc input	85 120		264 370	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			1.0 0.6	A A
inrush current	at 115 Vac, cold start at 230 Vac, cold start		20 35		A A
leakage current	at 240 Vac			2	mA
power factor	at 115 Vac at 230 Vac	0.98 0.93			

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output 12 Vdc output 15 Vdc output 24 Vdc output 48 Vdc output			10,000 6,000 5,000 1,500 680	µF µF µF µF µF
initial set point accuracy	at full load		±2		%
line regulation			±0.5		%
load regulation	5 Vdc output 0%~100% load other outputs 0%~100% load		±1 ±0.5		% %
hold-up time	at 230 Vac	16			ms
temperature coefficient			±0.03		%/°C
remote on/off (CTRL)	module on (0 ~ 0.8 Vdc) module off (4 ~ 10 Vdc)				

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output model, output shut down, latched 12 Vdc output model, output shut down, latched 15 Vdc output model, output shut down, latched 24 Vdc output model, output shut down, latched 48 Vdc output model, output shut down, latched			7.0 20.0 25.0 32.4 60.0	Vdc Vdc Vdc Vdc Vdc
over current protection	auto-recovery	105			%
over temperature protection[1]	over temperature protection activation over temperature protection deactivation	 50		85	°C °C
short circuit protection	constant current, continuous, auto-recovery				

Note: 1. Over temperature protection thresholds under full load conditions.

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, <5mA	2,000 4,000 500			Vac Vac Vac
safety approvals	certified to 62368: IEC, EN, UL/cUL designed to meet 60335: EN designed to meet 61558: EN designed to meet GB4943				
safety class	Class I				
conducted emissions	CISPR32/EN55032 CLASS B				
radiated emissions	CISPR32/EN55032 CLASS B				
harmonic current	IEC/EN61000-3-2 CLASS A				
ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV perf. Criteria B				
radiated immunity	IEC/EN61000-4-3 10V/m perf. Criteria A				
EFT/burst	IEC/EN61000-4-4 ±2KV perf. Criteria B				
surge	IEC/EN61000-4-5 line to line ±1KV/line to ground ±2KV perf. Criteria B				
conducted immunity	IEC/EN61000-4-6 10Vr.m.s perf. Criteria A				
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	5 Vdc output model, see derating curve other output models, see derating curve	-25 -25		60 70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	0		95	%

MECHANICAL

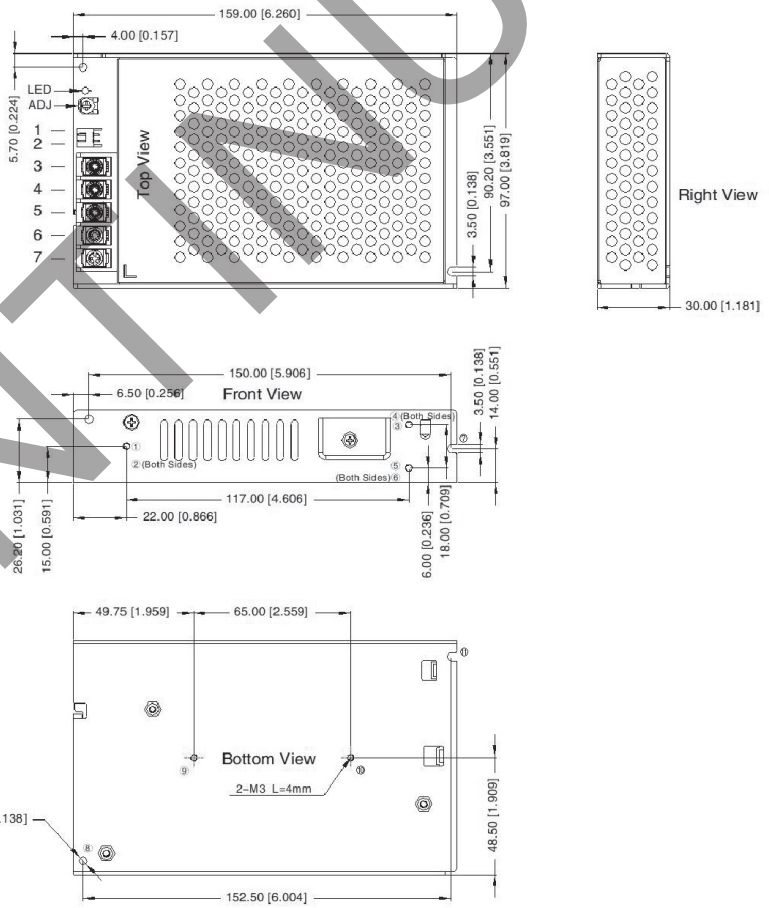
parameter	conditions/description	min	typ	max	units
dimensions	159 x 97 x 30				mm
weight			380		g
cooling	natural convection				
case material	metal (AL1100, SGCC)				

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	RC+
2	RC-
3	+Vo
4	-Vo
5	⏚
6	AC(N)
7	AC(L)

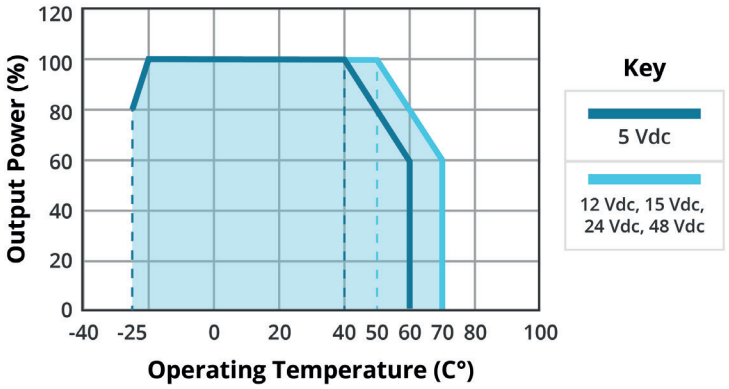
Note: At least one hole position, ①~⑪, must be securely connected to Protective Earth (PE). ⏚



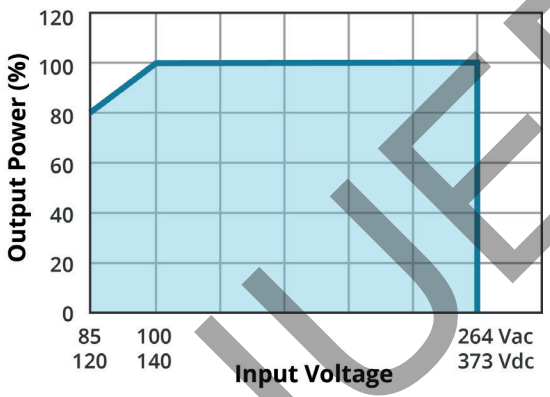
CN1: KANGDAO TJC3-NAWD-2P			
PIN	FUNCTION	CONNECTOR	TERMINAL
1	RC+	KANGDAO XI-25001-2Y	KANGDAO XH2.54-TE
2	RC-		

DERATING CURVE

TEMPERATURE DERATING CURVE

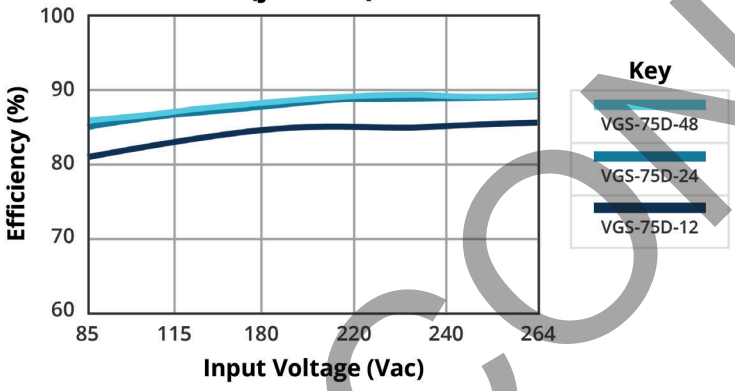


INPUT VOLTAGE DERATING CURVE (25°C)

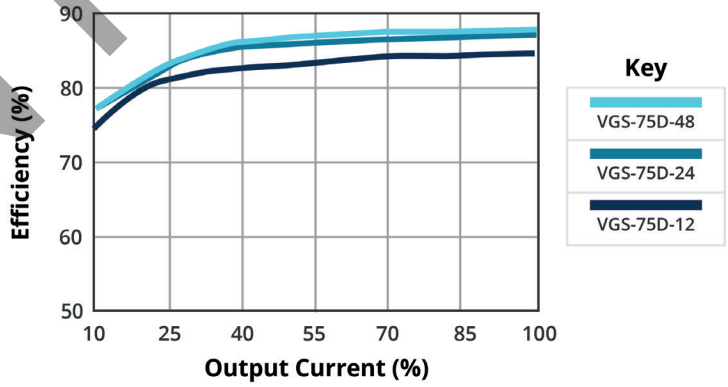


EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE (full load)



EFFICIENCY VS OUTPUT LOAD



REVISION HISTORY

rev.	description	date
1.0	initial release	12/09/2020
1.01	derating and efficiency curves updated	02/09/2022
1.02	UKCA mark added	06/10/2022
1.03	discontinued model VGS-75D-5-A	02/06/2023

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

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