

**PART NUMBER:** VF-D320-DXXXXA

**DESCRIPTION:** switching power supply

**features**

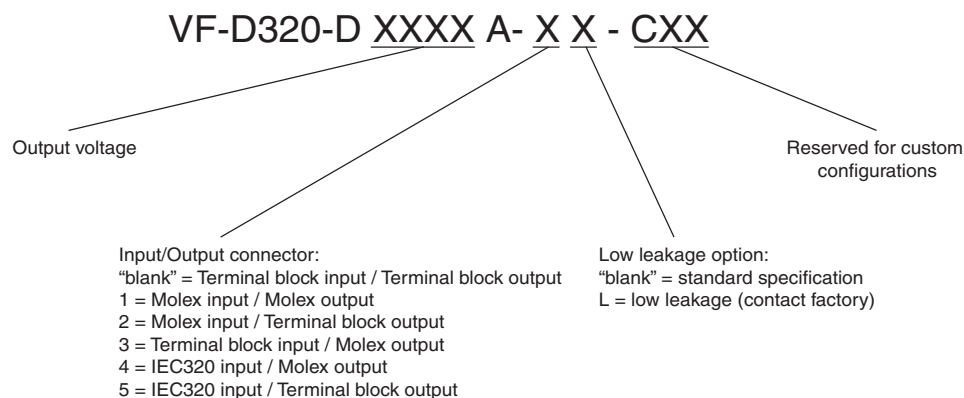
- power factor correction
- power good signal
- short circuit protection
- over load protection
- over voltage protection
- over temperature protection
- low leakage current 500  $\mu\text{A}$  @ 240 V ac  
300  $\mu\text{A}$  @ 120 V ac (optional)
- approved to UL, CUL, TUV, CE with CB scheme
- high power density: 8.9 watts/inch<sup>3</sup>
- dual output



MODEL	output <sup>1, 2</sup>	output current		ripple & noise <sup>5, 6</sup>	
		convection <sup>3</sup>	18 CFM <sup>4</sup>	regulation <sup>5</sup>	(mVpp)
VF-D320-D512A	5/12 V	15/10.42 A	30/16.67 A	±5%	±1%
VF-D320-D524A	5/24 V	15/5.2 A	30/8.33 A	±5%	±1%
VF-D320-D548A	5/48 V	15/2.6 A	30/4.16 A	±5%	±1%
VF-D320-D1224A	12/24 V	12.5/6.25 A	16.67/8.33 A	±5%	±1%

**notes:**

- 1 Output is fully isolated.
- 2 Output voltage is measured at output power connector.
- 3 150 W max combined power for V<sub>1</sub> and V<sub>2</sub> for VF-D320-D1224A, 125 W max. for all other models.
- 4 300 W max combined power for V<sub>1</sub> and V<sub>2</sub> for VF-D320-D1224A, 250 W max. for all other models.
- 5 1% minimum load is required to maintain the ripple and regulation.
- 6 Ripple and noise is measured from 10 KHz to 20 MHz at output terminals with a 0.1  $\mu\text{F}$  ceramic capacitor and a 22  $\mu\text{F}$  electrolytic capacitor in parallel.

**CUSTOM CONFIG KEY**


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## INPUT

parameter	conditions/description	min	nom	max	units
input frequency		47		63	Hz
input voltage	90-132 / 180-264 auto-selectable	90		264	VAC
Input current	At 100-120 VAC			8	A
	At 200-240 VAC			4	A
inrush current	Peak measured at 230 VAC at full load, cold start			70	A
	Peak measured at 115 VAC at full load, cold start			35	A
power factor	Passive power factor correction meets EN61000-3-2 class A				

## OUTPUT

parameter	conditions/description	min	nom	max	units
transient response	Output voltage returns to within 1% in less than 2.5 mS for a 50% load change. Peak transient does not exceed 5%.				
overshoot	Turn-on and turn-off overshoot shall not exceed 5% over nominal voltage.				
efficiency	Measured at 230 V and full load	75%			
turn on delay	At 120 VAC			1	second
hold up time	At 120 VAC and 80% of rated maximim load	20			ms
adjustability	Adjustable with built-in trim pot.	+/- 5%			
LED display	When green (LED1) is on the power supply is operating normally.				
power good	Designated as PG on the CN1. This signal goes TTL high 100-500 mS after the output reaches regulation. It goes low at least 1 mS before loss of regulation.				
fan drive	12 VDC/400mA for external fan				
fan fail alarm	Designated as FF on pin3 of CN1. Open collector output rated for 15 VDC/5mA sink correct. Goes high when fan failure is detected.				

## PROTECTION CIRCUIT

parameter	conditions/description
input fuse	Built-in ac fuse. A blown fuse usually indicates permanent damage to the power supply serviceable by factory only.
overload	Current limiting starts at 110-140% of the rated output current in foldback mode and recovers automatically.
short circuit	Short circuit can be continuous. Recovers automatically upon removal of short.
output over-voltage	Output is protected agaist overvoltage. Unit shuts down and latches when voltage at output terminals exceeds 130%. AC input needs to be reset to restart the power supply.
over temp.	Power supply shuts down when temperature is in excess of 85 °C. Auto recovery.

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## GENERAL AND SAFTEY

parameter	conditions/description	min	nom	max	units
operating temp.	0 to 70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C.	0		70	°C
storage temp.		-20		85	°C
operating humid.	Non-condensing	5%		90%	RH
storage humid.	Non-condensing	5%		95%	RH
EMI	Pass FCC Part 15, CISPR 22 class B, Conducted				
safety	UL60950-1, CSA C22.2 No. 60950-1-03, TUV EN60950-1 and CB, CE Mark (LVD) EN61000-3-2, 3 & IEC61000-4 Series regulations and CB				
leakage current (optional)	at 240 VAC at 120 VAC at 240 VAC			1.5 300 500	mA uA uA
vibration	Acceleration $\pm 7.35$ M/(SxS), on X, Y and Z Axis	5		50	Hz
isolation voltage (HI-POT)	Applied for 3 seconds at 10 mA max. Primary to secondary: Primary to transformer core: Primary to chassis:	3000 1500 1500			VAC VAC VAC
grounding test	Allowable resistance measured when 25 A current is applied from the ground pin of the three prong plug to the farthest earthed connection point.			0.1	$\Omega$
warranty	Standard warranty length			2	years
MTBF	According to MIL-HDBK-217 at 30 °C	100,000			hours
burn-in	Full load, at $45 \pm 5$ °C, 230 VAC.			1	hours
cooling	Convection.				

## MECHANICAL

parameter	conditions/description	min	nom	max	units
weight				600	grams
enclosure	6(L) x 4(W) x 1.5(H)				inches

## LOGIC SIGNAL CONNECTOR - (CN1)

parameter	conditions/description
CN1	JST B2B-XH-3 or equivalent (CHYAO SHIUNN JS-1001-03) <b>Suggested mating connector:</b> JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03)
RTN	common (gnd) pin for PG and FF

## FAN DRIVER CONNECTOR - (FAN2)

parameter	conditions/description
FAN2	<b>Suggested mating connector:</b> JST XHP-2 (2 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-02)

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**INPUT / OUTPUT CONNECTOR - (CN2)**

parameter	conditions/description
option 1	<p><b>AC INPUT</b> JST VH series (5 pin with pins 2 and 4 removed) or equivalent (Chyao Shiunn JS-1120-05)  <b>Suggested mating plug:</b> JST VHR-5N (5 pin) or equivalent (Chyao Shiunn JS-1121-05)            contact: JST SVH series or similar</p> <p><b>DC OUTPUT</b> JST VH series (10 pin) or equivalent (Chyao Shiunn JS-1120-10)  <b>Suggested mating plug:</b> JST VHR-10N (10 pin) or equivalent (Chyao Shiunn JS-1121-10)            contact: JST SVH series or similar</p>
option 2	<p>Howder Terminal block Part No. HB-95-7P (7 pin, M3.5 Screw) 9.5mm spacing  <b>Suggested mating connector:</b> Molex 19198-0045 or similar</p>
RTN	common (gnd) pin for $V_1$ and $V_2$

Howder	Molex
Pin 1: V1	Pins 1 ~ 3: V1
Pin 2 ~ 3: RTN	Pins 4 ~ 8: RTN
Pin 4: V2	Pins 9 ~ 10: V2
Pin 5: GND	Pin 11: GND
Pin 6: Neutral	Pin 13: Neutral
Pin 7: Line	Pin 15: Line

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