

PART NUMBER: VF-S150-XXA-CF

DESCRIPTION: switching power supply

features

- ac input range auto-selectable
- power factor correction
- remote on/off
- power good signal
- short circuit protection
- over load protection
- over voltage protection
- over temperature protection
- providing Peak Power 600W within 500uS duty duration
- approved to UL, CUL, TUV, CE with CB scheme
- high power density: 6.25 watts cu. in.

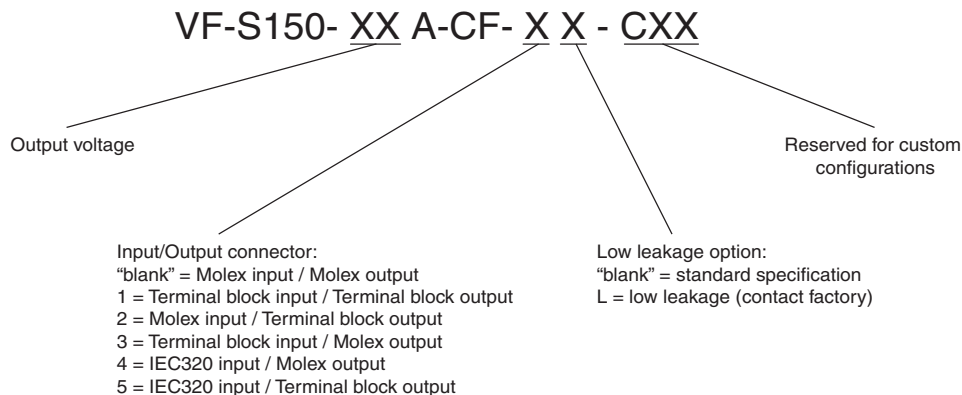


MODEL	preset voltage	output ^{1, 2, 3}	output current		max. power ⁵	regulation ^{4, 5}	ripple & noise ^{4, 5} (Vpp)
			convection	16 CFM			
VF-S150-03A-CF	3.3V	3 - 4 V	20 A	30 A	120 W	+/- 1%	50 mV
VF-S150-05A-CF	5V	5 - 6 V	20 A	30 A	150 W	+/- 1%	50 mV
VF-S150-12A-CF	12V	12 - 16 V	8.33 A	12.5 A	150 W	+/- 1%	+/- 1%
VF-S150-18A-CF	18V	17 - 23 V	5.56 A	8.33 A	150 W	+/- 1%	+/- 1%
VF-S150-24A-CF	24V	24 - 30 V	4.17 A	6.25 A	150 W	+/- 1%	+/- 1%
VF-S150-48A-CF	48V	35 - 56 V	2.08 A	3.13 A	150 W	+/- 1%	+/- 1%

notes:

- 1 Output is fully isolated.
- 2 Output voltage is measured at output power connector.
- 3 1% minimum load is required to maintain the ripple and regulation.
- 4 Ripple and noise is measured from 10 kHz to 20 MHz at output terminals with a 0.1 µF ceramic and a 22 µF electrolytic capacitor in parallel.
- 5 Maximum power with 16 CFM forced air. Maximum power with convection cooling is 100 W except for VF-S150-03A-CF which is 80 W max.

CUSTOM CONFIG KEY



**PART NUMBER:** VF-S150-XXA-CF**DESCRIPTION:** switching power supply**INPUT**

parameter	conditions/description	min	nom	max	units
input frequency		47		63	Hz
input voltage	90-132 / 180-264 auto-selectable	90/180		132/264	VAC
input current	At 115 VAC			4	A
	At 230 VAC			2	A
inrush current	peak measured at 230 VAC at full load, cold start			70	A
power factor	Passive Power 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				
	3.3 V model:	70%			
	5 V model:	70%			
	12 V model:	80%			
	minimum for all other models:	83%			
turn on delay	At 120 VAC			1	second
hold up time	At 120 VAC and 80% of rated maximum 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 high 100-500 mS after the output reaches regulation. It goes low at least 1 mS before loss of regulation.				
fan drive	12 VDC/300mA for external fan				

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 against 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.

**PART NUMBER:** VF-S150-XXA-CF**DESCRIPTION:** switching power supply**GENERAL AND SAFETY**

parameter	conditions/description	min	nom	max	units
operating temp.	Derates linearly from 100% load at 50°C to 50% load at 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	CISPR 22/EN55022 class B, EN61000-3-2, 3, EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024 CE marked (LVD)				
safety	UL60950(E222889), CSA C22.2 No. 60950, TUV EN60950 and CB				
leakage Current	264VAC			3.5	mA
switching frequency			25K		Hz
vibration	Acceleration ± 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	Ω
warranty	Standard warranty length			2	years
MTBF	According to MIL-HDBK-217 at 30 °C	100,000			hours
burn-in	Full load, at 45 ± 5 °C, 230 VAC.			1	hours
remote on/off	Designated as RMSW on the CN1, requires a low signal to inhibit output. Hiccough mode.				

MECHANICAL

parameter	conditions/description	min	nom	max	units
weight				500	grams
enclosure	5(L) x 3.2(W) x 2(H)				inches

LOGIC CONNECTOR - (CN1)

parameter	conditions/description
logic	JS B7B-XH-A Suggested mating connector: JST XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03)
pin assignments:	1. Power good 2. Remote switch 3. RTN

**PART NUMBER:** VF-S150-XXA-CF**DESCRIPTION:** switching power supply**FAN DRIVER CONNECTOR - (FAN)**

parameter	conditions/description
fan	Suggested mating connector: JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02)

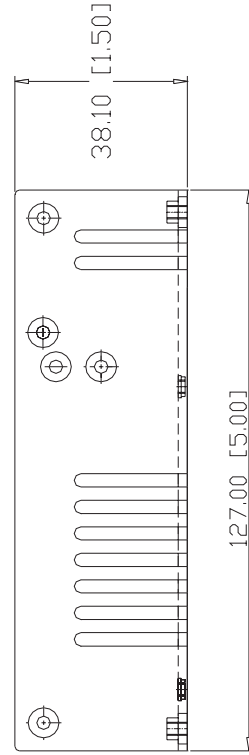
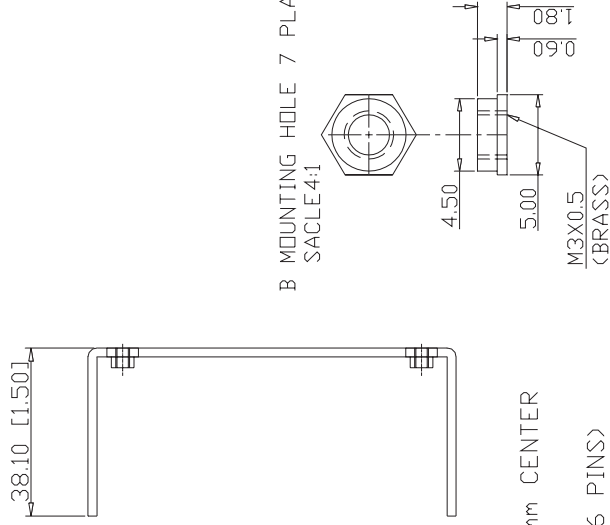
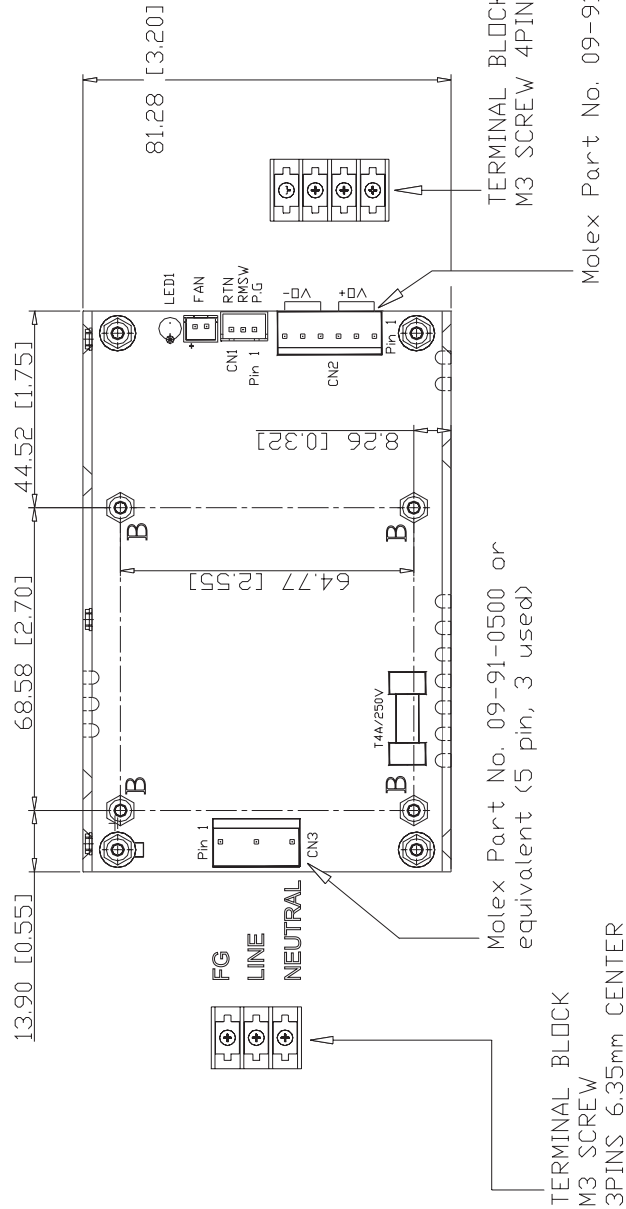
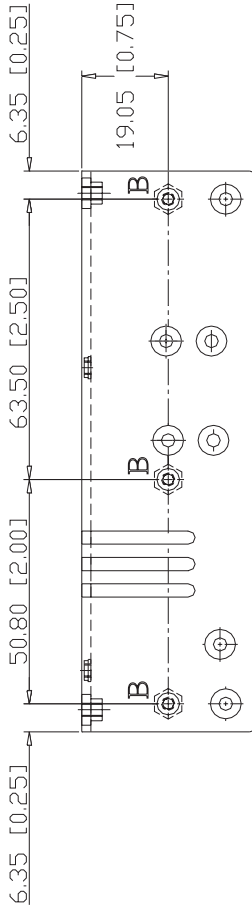
OUTPUT CONNECTOR - (CN2)

parameter	conditions/description
output (option 1)	Molex Part No. 26-48-1061 or similar (6 pin) Output pin assignment, V+ (Pins 1-3), V- (Pins 4-6) Suggested mating connector: Molex Part No. 09-91-0600 or equivalent (6)
output (option 2)	Howder Terminal block Part No. HD-601-4P (4 pin, M3.5 Screw) 6.35 mm spacing Output pin assignment, V+ (Pins 1-2), V- (Pins 3-4) Suggested mating connector: Molex 19198-0045 or similar

INPUT CONNECTOR - (CN3)

parameter	conditions/description
AC input (option 1)	Molex Part No. 26-48-1051 or similar (5 pin, 3 used). Suggested mating plug: Molex Part No. 09-91-0500 or equivalent (5 pin, 3 used)
AC input (option 2)	Howder Terminal block Part No. HD-601-3P (3 pin, M3.5 Screw) 6.35 mm spacing Suggested mating connector: Molex 19198-0045 or similar

REV. A	DESCRIPTION NEW DRAWING	DATE 8/22/2008
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20050 SW 112th Ave.
Tualatin, OR 97062
Phone: 503-612-2300
800-275-4899
Fax: 503-612-2383
Website: www.cui.com

TITLE: Switching Power Supply	REV: A
PART NO. VF-S150-XXX-CF	UNITS: MM
DRAWN BY: JMS	APPROVED BY:
SCALE:	

