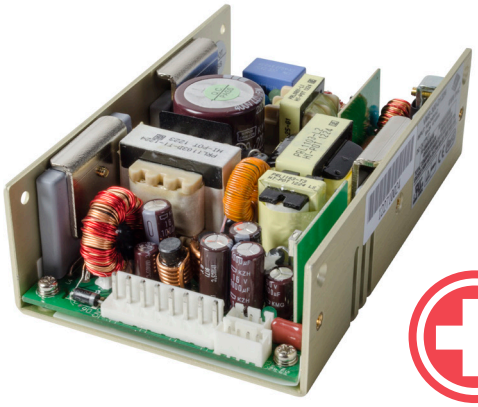
SERIES: VMS-300 | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

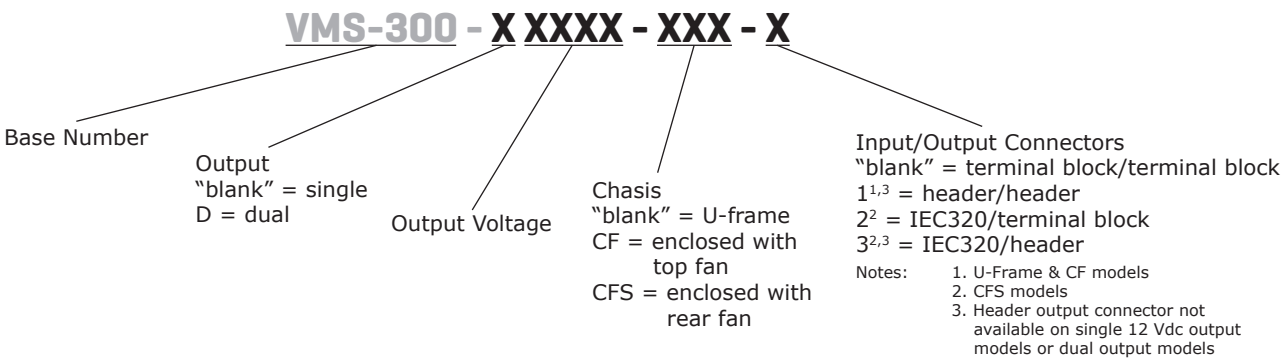
- up to 300[2] W continuous power
- 12.5 W/in^3 power density
- universal input (90~264 Vac)
- 12 Vdc auxiliary fan output
- over voltage, short circuit, and over temperature protections
- built-in active PFC function
- efficiency up to 85%



MODEL		output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[4, 5] max (mVp-p)	efficiency min (%)
VMS-300-12		12	25[2]	300[2]	120	82
VMS-300-15		15	20[2]	300[2]	150	82
VMS-300-24		24	12.5[2]	300[2]	240	83
VMS-300-36		36	8.33[2]	300[2]	360	84
VMS-300-48		48	6.25[2]	300[2]	480	84
VMS-300-D0512*	V1 V2	5 12	24[3] 13.33[3]	240[3]	50 120	80
VMS-300-D1224	V1 V2	12 24	13.33[3] 6.67[3]	240[3]	120 240	85
VMS-300-12-CF		12	25	300	120	82
VMS-300-15-CF		15	20	300	150	82
VMS-300-24-CF		24	12.5	300	240	83
VMS-300-36-CF		36	8.33	300	360	84
VMS-300-48-CF		48	6.25	300	480	84
VMS-300-D0512-CF*	V1 V2	5 12	24 13.33	240[3]	50 120	80
VMS-300-D1224-CF	V1 V2	12 24	13.33 6.67	240[3]	120 240	85
VMS-300-12-CFS		12	25	300	120	82
VMS-300-15-CFS		15	20	300	150	82
VMS-300-24-CFS		24	12.5	300	240	83
VMS-300-36-CFS		36	8.33	300	360	84
VMS-300-48-CFS		48	6.25	300	480	84
VMS-300-D0512-CFS*	V1 V2	5 12	24 13.33	240[3]	50 120	80
VMS-300-D1224-CFS	V1 V2	12 24	13.33 6.67	240[3]	120 240	85

Notes:
1. Peak power of 600 W within 500 µs only applies to single output models
2. Total continuous output power will not exceed 300 W with 25 CFM forced air, 150 W without fan.
3. Total combined continuous output power will not exceed 240 W with 25 CFM forced air, 120 W without fan.
4. Measured at 10 kHz ~ 20 MHz, with 0.1 µF ceramic and 22 µF electrolytic parallel capacitors
5. 1% minimum load is required to maintain the ripple and regulation (10% for dual output models)
6. * Discontinued model.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage		90		264	Vac
frequency		47		63	Hz
current	at 90 Vac, cold start			5	A
inrush current	at 115 Vac, cold start at 230 Vac, cold start			35 70	A A
power factor correction	single output models pass EN61000-3-2 Class D dual output models		-- 0.95		
leakage current	at 264 Vac			0.3	mA
input fuse	5 A / 250 V inserted in primary				
remote ON/OFF	designated as INH on pin 4 of CN3, requires a low signal to inhibit output				

OUTPUT

parameter	conditions/description	min	typ	max	units
load regulation	single output models dual output models		±1 ±5		% %
transient response	returns to within 1% in <2.5 ms for a 50% load change and the peak transient does not exceed 5%				
start-up time	at 230 Vac			1	s
hold-up time	at 120 Vac, 80% load	16			ms
adjustability	user adjustable		±5		%
switching frequency	PFC PWM PWM dual output models	50 65 45		70 75 55	kHz kHz kHz
fan drive	12 Vdc / 300 mA for external fan				
fan fail (FF)	designated as FF on pin 3 of CN3, open collector output rated for 28 Vdc/5 mA sink current max., goes high when a fan failure is detected				
power good (PG)	designated as PG on pin 1 of CN3, open collector, goes high 100-500 ms after DC regulation and goes low at least 1ms before loss of regulation				

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	latch down and auto restart			130	%
over current protection	auto restart	110		140	%
short circuit protection	auto restart with no damage from a short on any output				
over temperature protection	auto restart		110		°C

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	primary to secondary at 10 mA for 3 seconds primary to chassis at 10 mA for 3 seconds primary to core at 10 mA for 3 seconds	4,000 1,500 1,500			Vac Vac Vac
safety approvals	UL 60601-1, EN 60601-1, IEC 60601-1 (Edition 3.1)				
EMI/EMC	EN 60601-1-2 (4th Edition), EN 55011 Class B, EN 61000-3-(2,3), IEC 61000-4-(2,3,4,5,6,8,11)				
MTBF	as per MIL-HDBK-217F at 30°C	100,000			hours
RoHS	2011/65/EU				

ENVIRONMENTAL

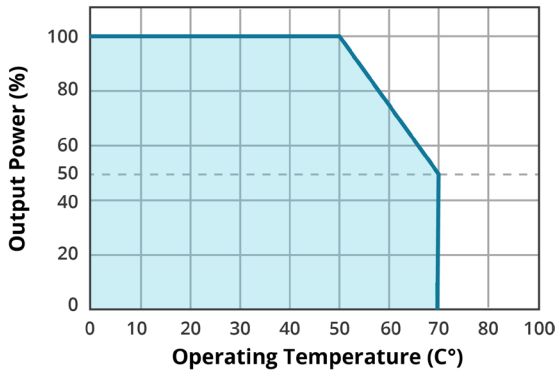
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	0		70	°C
storage temperature		-20		85	°C
operating humidity	non-condensing	5		90	%
storage humidity	non-condensing	5		95	%
vibration	5 ~ 50 Hz, acceleration ±7.35 m/s*s per axis				

CONNECTORS

parameter	conditions/description	
input connector (CN1)	U-frame and CF	Terminal Block: Howder M3 screws 3 pin 6.35 mm center Part No. HD-601-3P; PCB Labeling: L=Line; N=Neutral; G=Chassis Ground Header: CHYAO SHIUNN JS-1120-05 Mating: JST VHR-5N or equivalent (5 pin, 3 used)
	CFS	Terminal Block: Howder HD-602-3P Input plug: IEC320 Inlet
output connector (CN2)	single output models	Terminal block: Dinkle P830N, M5 screws Header: CHYAO SHIUNN JS-1120-06 Mating: JST VHR-6N or equivalent (6 pin)
	dual output models	Terminal block: Howder HD-816-3P, M3 screws
output pin assignment	single output models	Terminal block: Pin 1 = -V, Pin 2 = +V Header: Pins 1~3 = V-, Pins 4~6 = V+
	dual output models	Terminal block: Pin 1 = V2, Pin 2 = RTN, Pin 3 = V1
logical signal connector (CN3)	Mating JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04); Mating Pins: JST SXH-002T-P0.6 FOR AWG 30 to 26	
fan driver connector (FAN1)	Mating connector is JST P/N XHP-3 (3 pins 0.98 pitch) or equivalent (CHYAO SHIUNN JS-2001-03)	

DERATING CURVE

TEMPERATURE DERATING CURVE



Single Output

U-Frame	at 300 W max. with 25 CFM forced air cooling, at 150 W max. convection
CF	up to 300 W max.
CFS	up to 300 W max.

Dual Output

U-Frame	at 240 W max. with 25 CFM forced air cooling, at 120 W max. convection
CF	up to 240 W max.
CFS	up to 240 W max.

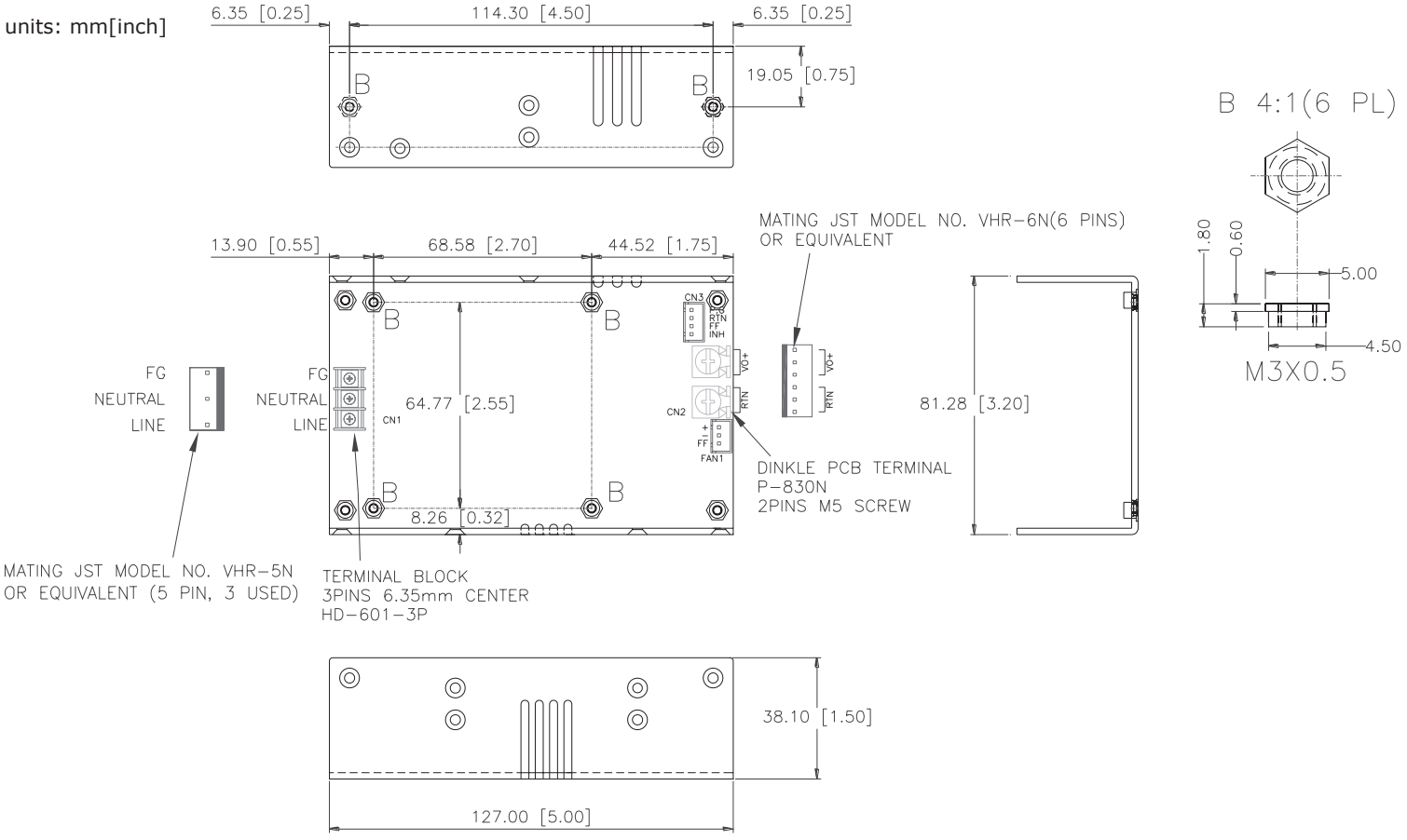
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	U-Frame: 127 x 81.28 x 38.1 (5 x 3.2 x 1.5 inch) CF: 127 x 81.28 x 50.8 (5 x 3.2 x 2 inch) CFS: 165.1 x 81.28 x 40.64 (6.5 x 3.2 x 1.6 inch)				mm mm mm
weight	U-frame CF CFS			500 600 650	g g g

MECHANICAL DRAWING - SINGLE OUTPUT MODELS

U-FRAME

units: mm[inch]

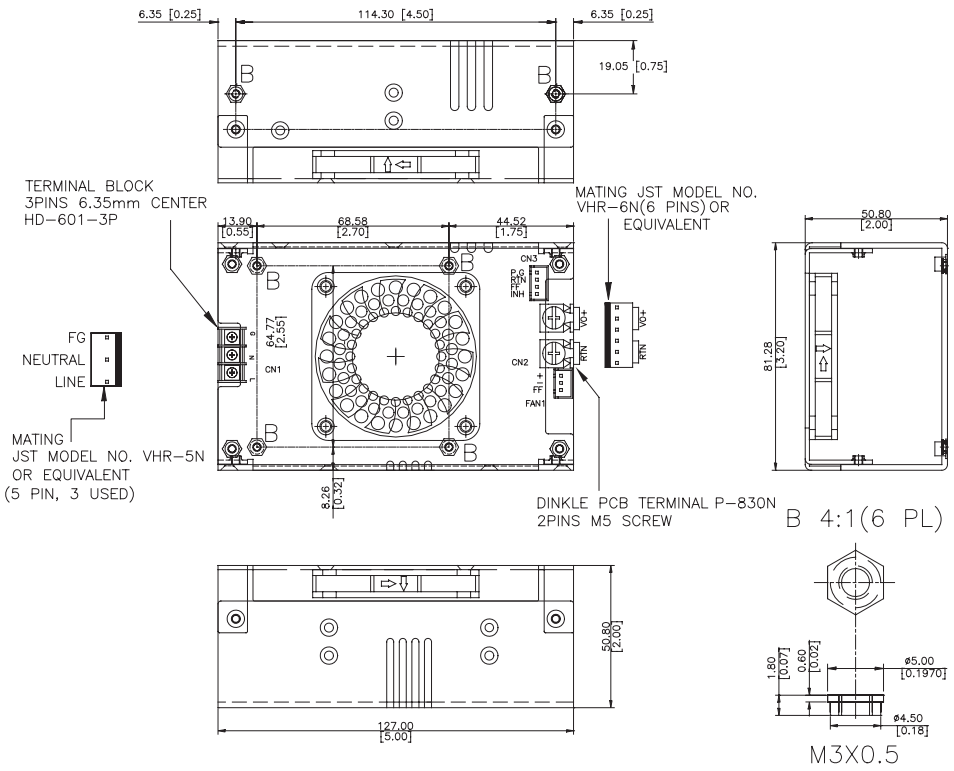


Note: 1. Mounting hole max screw depth is 4.0mm (M3x0.5 Inserts).

MECHANICAL DRAWING - SINGLE OUTPUT MODELS (CONTINUED)

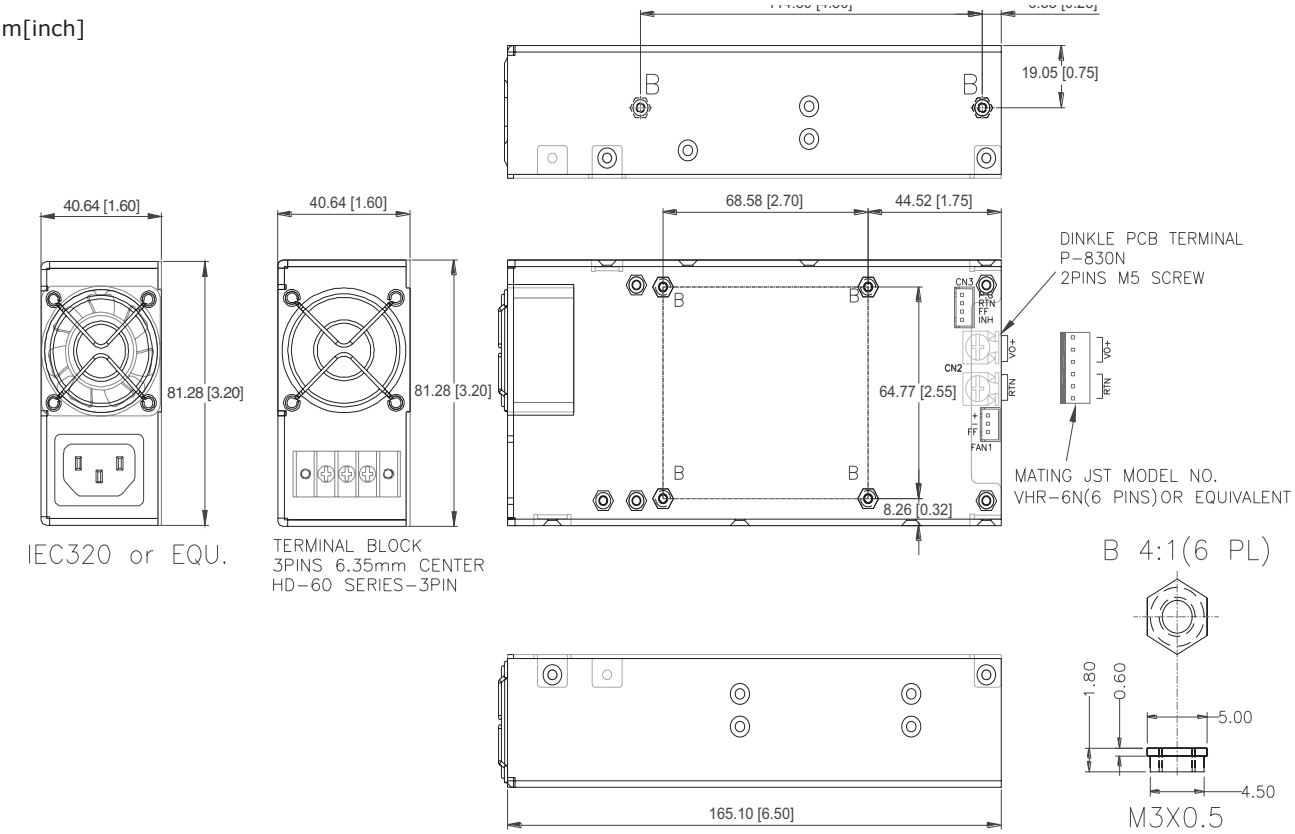
CF

units: mm[inch]



CFS

units: mm[inch]

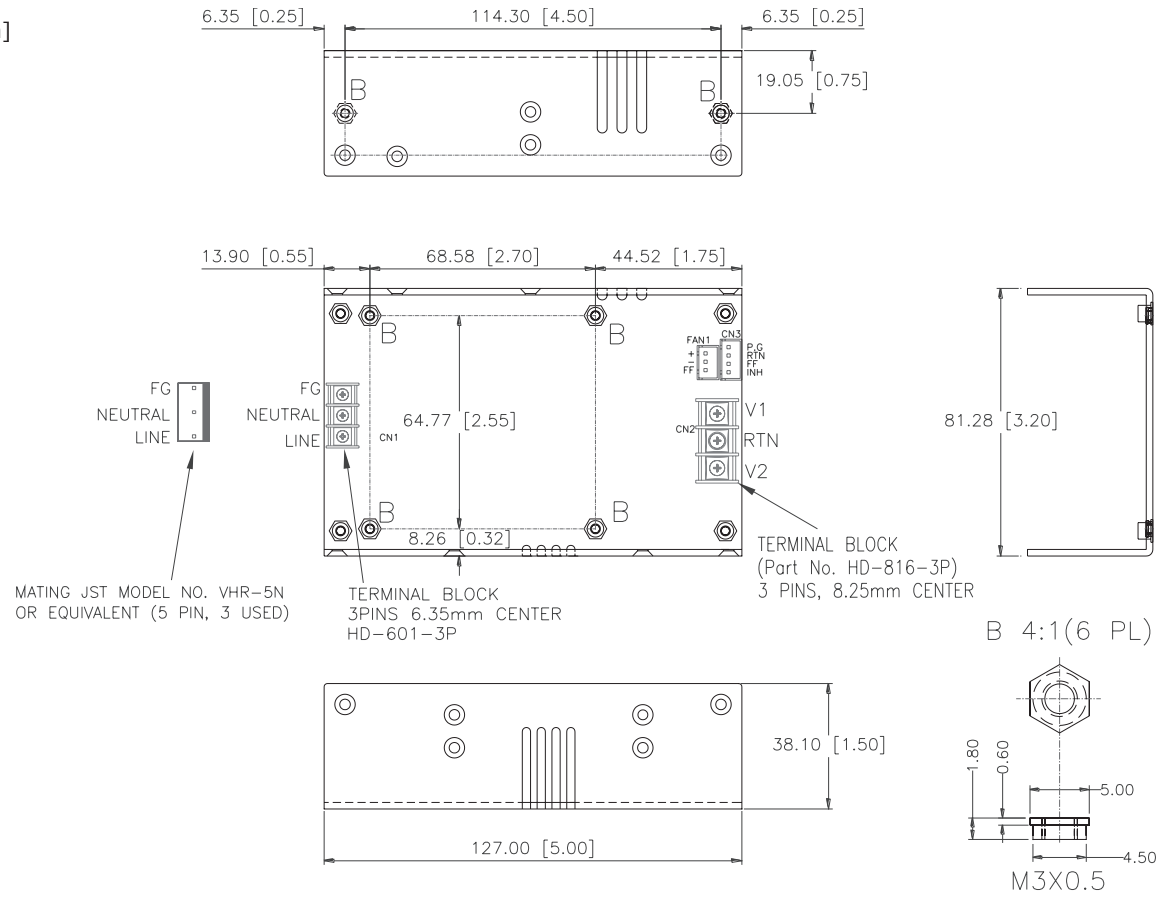


Note: 1. Mounting hole max screw depth is 4.0mm (M3x0.5 Inserts).

MECHANICAL DRAWING - DUAL OUTPUT MODELS

U-FRAME

units: mm[inch]

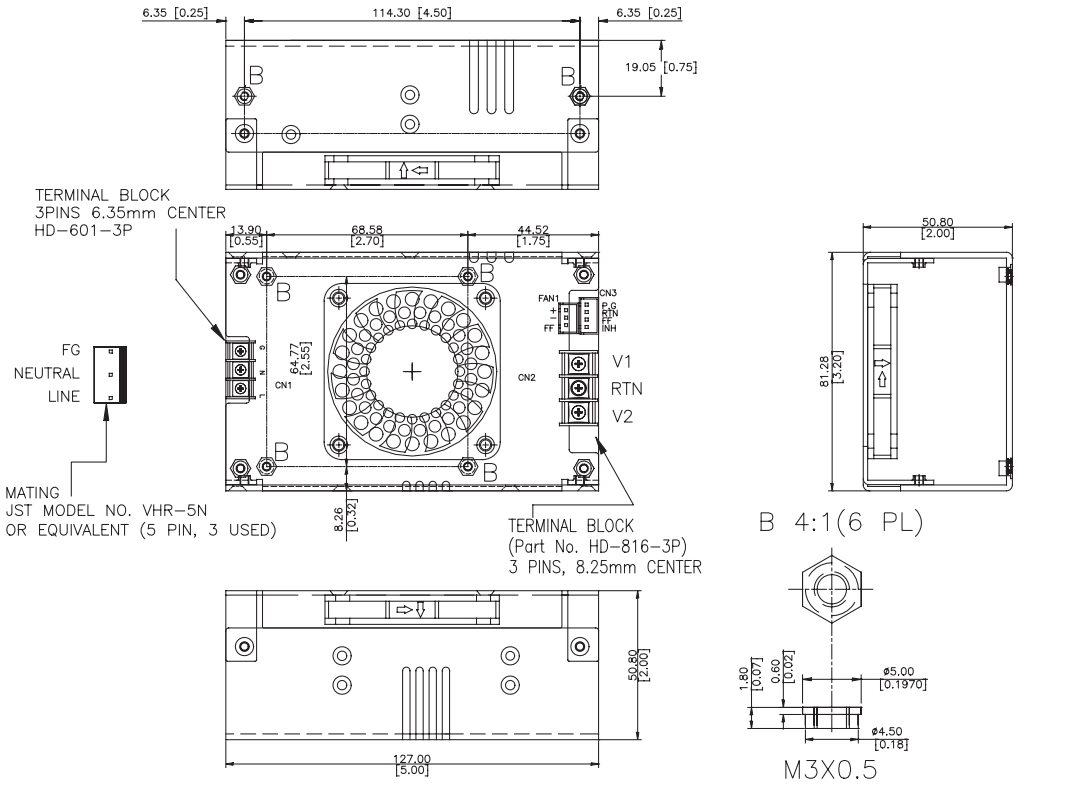


Note: 1. Mounting hole max screw depth is 4.0mm (M3x0.5 Inserts).

MECHANICAL DRAWING - DUAL OUTPUT MODELS (CONTINUED)

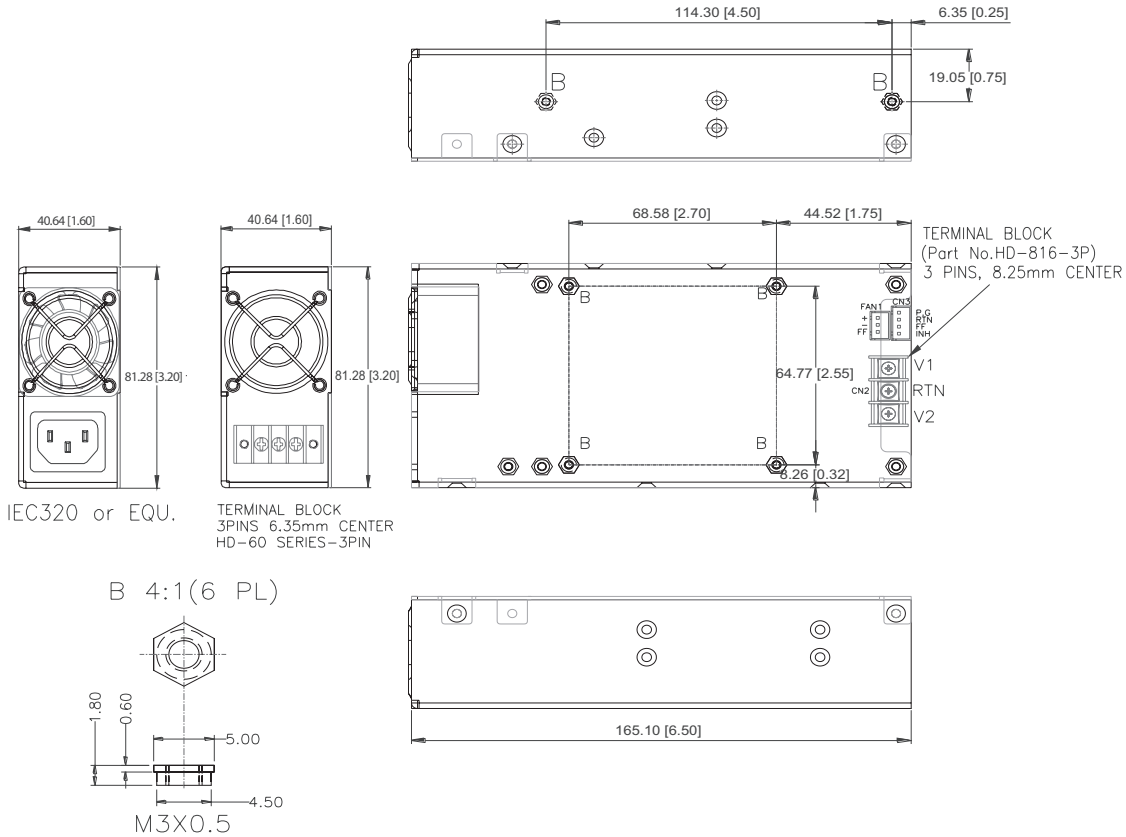
CF

units: mm[inch]



CFS

units: mm[inch]



Note: 1. Mounting hole max screw depth is 4.0mm (M3x0.5 Inserts).

REVISION HISTORY

rev.	description	date
1.0	initial release	08/14/2012
1.01	updated part number key, derating curve, misc. updates	09/24/2012
1.02	updated spec	04/25/2013
1.03	updated spec	07/03/2013
1.04	removed connector options	08/05/2013
1.05	added connector options	10/21/2013
1.06	added 2 mounting holes for internal fan on "CF" models	04/23/2015
1.07	updated datasheet	05/05/2016
1.08	updated to safety Edition 3.1 and EMC 4th Edition	07/24/2018
1.09	company logo updated	12/17/2020
1.10	derating curve updated	05/05/2021
1.11	discontinued model VMS-300-D0512, VMS-300-D0512-CF & VMS-300-D0512-CFS	06/07/2022

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

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