CUI INC
a bel group

SERIES: PCM-400 | DESCRIPTION: AC-DC POWER SUPPLY

FEATURES

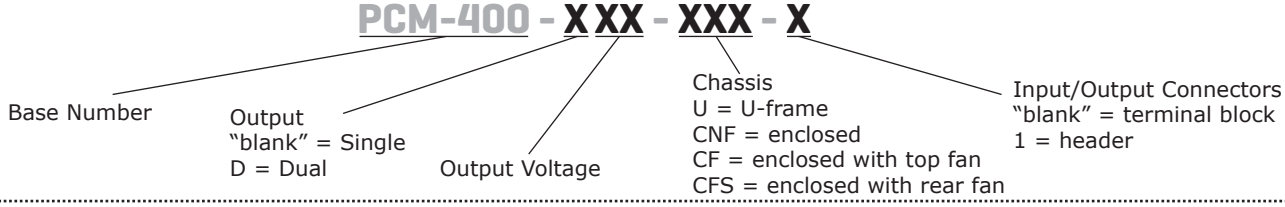
- up to 400 W continuous power
- universal input (90~264 Vac)
- active power factor correction
- peak power of 700W for 500µs duration (single output models only)
- built-in remote ON/OFF, power good, & fan fail alarm options
- over voltage, short circuit, over current, and over temperature protection
- efficiency up to 87%

MODEL

MODEL		preset output voltage (Vdc)	customizable output range[7] (Vdc)	output current max (forced air) (A)	output current max (convection) (A)	output power max (W)	ripple and noise[8,9] max (mVp-p)	efficiency typ (%)
PCM-400-12[1,2]		12	10~13.8	33.33	18.33	400	120	85
PCM-400-15[1,2]		15	14~15.5	26.67	14.67	400	150	85
PCM-400-18[1,2]		18	16~20	22.22	12.22	400	180	85
PCM-400-24[1,2]		24	21~26	16.67	9.17	400	240	87
PCM-400-28[1,2]		28	27~34	14.29	7.86	400	280	85
PCM-400-36[1,2]		36	35~42	11.11	6.11	400	360	87
PCM-400-48[1,2]		48	43~50	8.33	4.58	400	480	87
PCM-400-54[1,2]		54	51~60	7.41	4.07	400	540	87
PCM-400-D0512[3,4,*]	Vo1 Vo2	5 12	N/A	30 20.83	15 13.33	320	50 120	87
PCM-400-D0524[3,4,*]	Vo1 Vo2	5 24	N/A	30 10.42	15 6.67	320	50 240	87
PCM-400-D0548[3,4,*]	Vo1 Vo2	5 48	N/A	30 5.21	15 3.33	320	50 480	87
PCM-400-D1224[5,6]	Vo1 Vo2	12 24	N/A	20.83 10.42	12.5 8.33	400	120 240	87

Notes:
1. For U-frame models, the maximum output power is 400W with a minimum of 27 CFM forced air, 220 W maximum with convection cooling.
2. For CNF models, the maximum output is 220 W with convection cooling.
3. For U-frame models, the total combined output power is 320W with a minimum of 27 CFM forced air, 180 W maximum with convection cooling.
4. For CNF models, the maximum output is 180 W with convection cooling.
5. For U-frame models, the total combined output power is 400W with a minimum of 27 CFM forced air, 200 W maximum with convection cooling.
6. For CNF models, the maximum output is 200 W with convection cooling.
7. Output can be custom set within range.
8. Measured at 10 kHz ~ 20 MHz bandwidth, with a 22 µF electrolytic and 0.1 µF ceramic capacitor on the output.
9. 1% minimum load is required to maintain ripple and regulation (10% for dual output models).
10. * 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, full load		8		A
inrush current	at 115 Vac, cold start at 230 Vac, cold start			35 70	A A
leakage current	at 120 Vac at 240 Vac			300 500	µA µA
power factor correction	at 230 Vac, full load	0.9			
remote ON/OFF	designated as INH on Pin 4 of CN1, requires a low signal to inhibit output				
input fuse	T8 A/250 V on the input				

OUTPUT

parameter	conditions/description	min	typ	max	units
total 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 120 Vac			1.5	s
hold-up time	at 120 Vac, 75% load	16			ms
adjustability[1]	built in trim pot		±5		%
switching frequency	PFC		68		kHz
	PWM all single output models & PCM-400-D1224 all other dual output models		55 50		kHz kHz
fan drive	12 Vdc/300 mA for external fan				
fan fail (FF)	Designated as FF on Pin 3 of CN1, open collector output rated for 15Vdc/5mA max sink current. It goes high when a fan failure is detected.				
power good (PG)	Designated as PG on CN1, TTL high 100~500 ms after DC regulation. It goes low at least 1 ms before loss of regulation.				
power supply on	green LED designated as LED1 on the PCB				

Note: 1. U-Frame versions only

PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	auto restart				
over current protection	auto restart	110		140	%
over voltage protection	output latches, must recycle ac input to reset		130		%
over temperature protection	auto restart	105	110	115	°C

SAFETY & COMPLIANCE

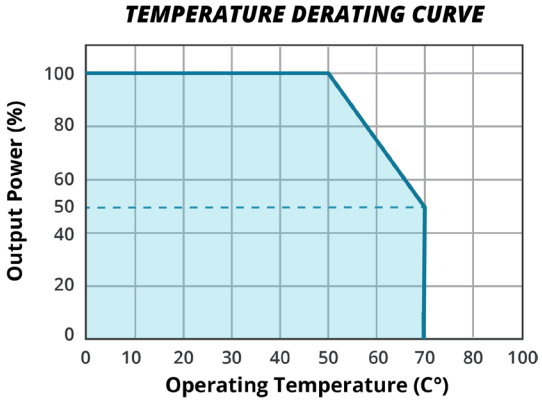
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 3 sec. input to core, for 3 sec. input to chassis (10 mA AC cut-off current), for 3 sec.	3,000 1,500 1,500			Vac Vac Vac
safety approvals	UL/cUL, TUV				
safety standards	62368: IEC, EN, UL				
EMI/EMC[2]	EN 55022 Class B (conducted/radiated), EN 61000-3-(2,3), EN 55024, IEC 61000-4-(2, 3, 4, 5, 6, 11), CE				
MTBF	as per MIL-HDBK-217F at 30°C	100,000			hrs
RoHS	2011/65/EU				

Note: 2. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

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	at 5~50 Hz, along the X, Y, and Z axis		±0.75		G

DERATING CURVE



MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	U-frame models: 152.40 x 101.60 x 38.10 CNF models: 152.40 x 101.60 x 39.90 CF models: 152.40 x 101.60 x 54.45 CFS models: 177.80 x 101.60 x 40.64				mm mm mm mm
weight	U-frame models CNF models CF models CFS models		600 650 800 750		g g g g

MECHANICAL DRAWING - SINGLE OUTPUT MODELS

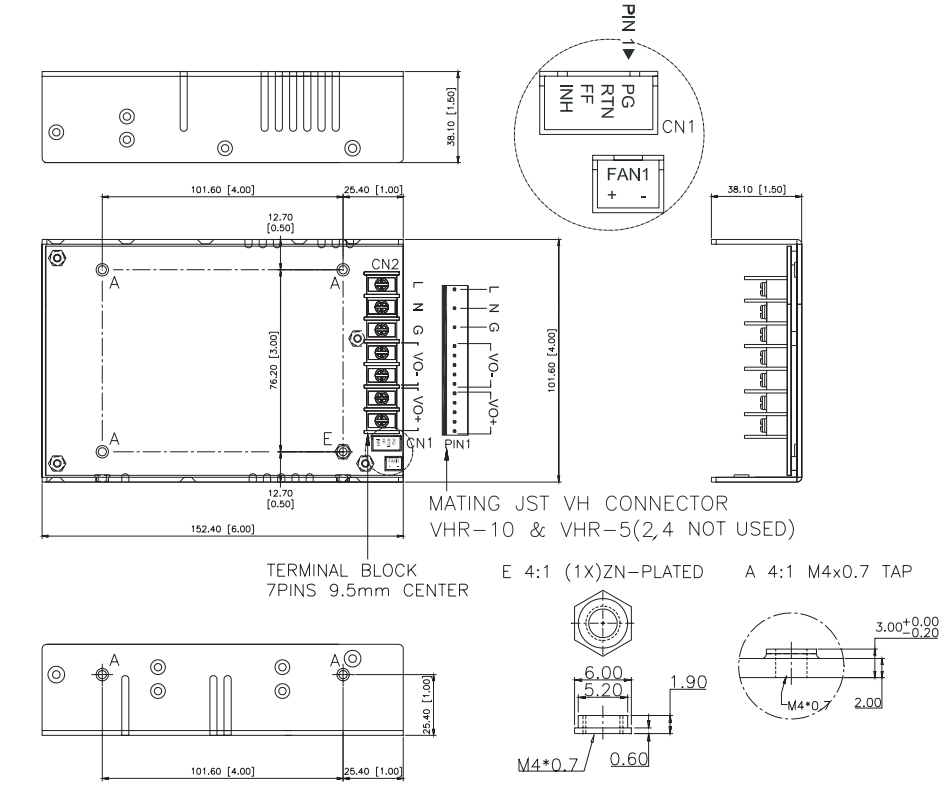
U-FRAME

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1~2	+Vo	1~5	+Vo
3~4	-Vo	6~10	-Vo
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



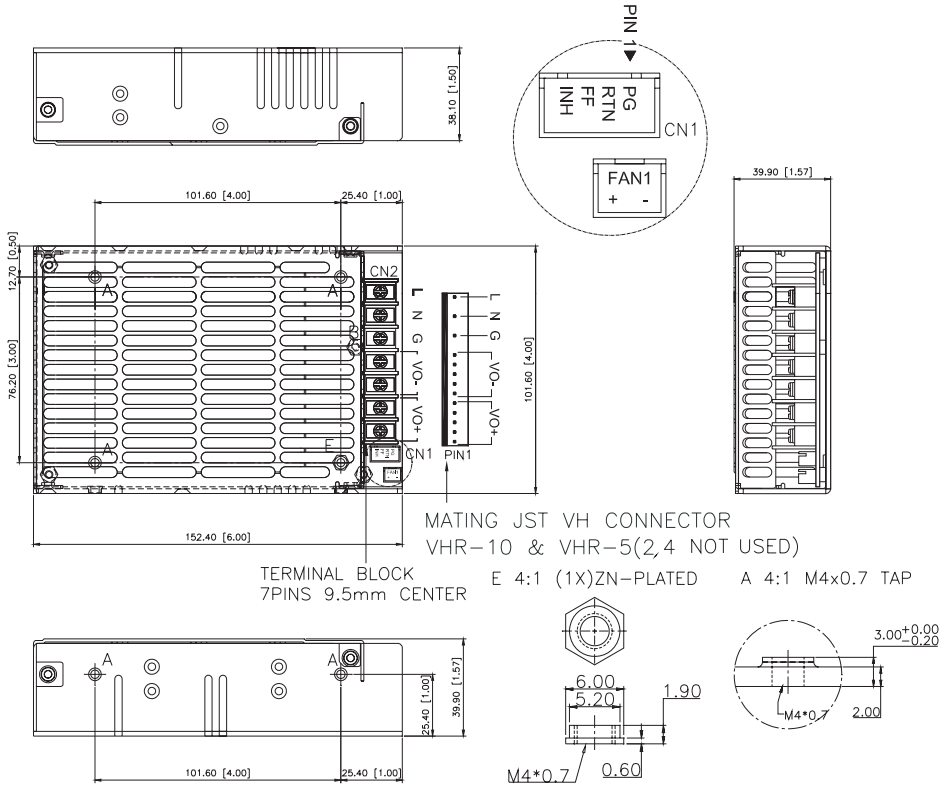
CNF

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1~2	+Vo	1~5	+Vo
3~4	-Vo	6~10	-Vo
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



Notes:
1. CN1 mates with JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04) and JST SXH-002T-P0.6 mating pins (30~26 AWG).
2. CN2: Terminal Block option is Howder Part No. HD-121-7P. Header option mates with JST VHR-5 (input) and VHR-10 (output).
3. Fan drive connector (Fan1) mates with JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).
4. Mounting hole max screw depth is 2.0mm (M4x0.7 Inserts).

MECHANICAL DRAWING - SINGLE OUTPUT MODELS (CONTINUED)

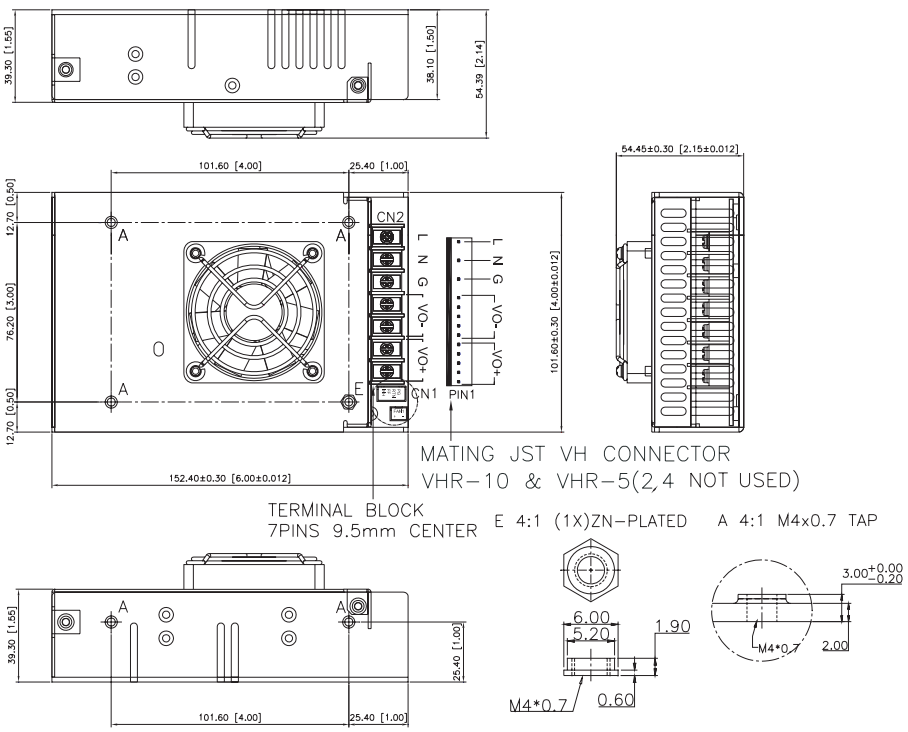
CF

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1~2	+Vo	1~5	+Vo
3~4	-Vo	6~10	-Vo
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



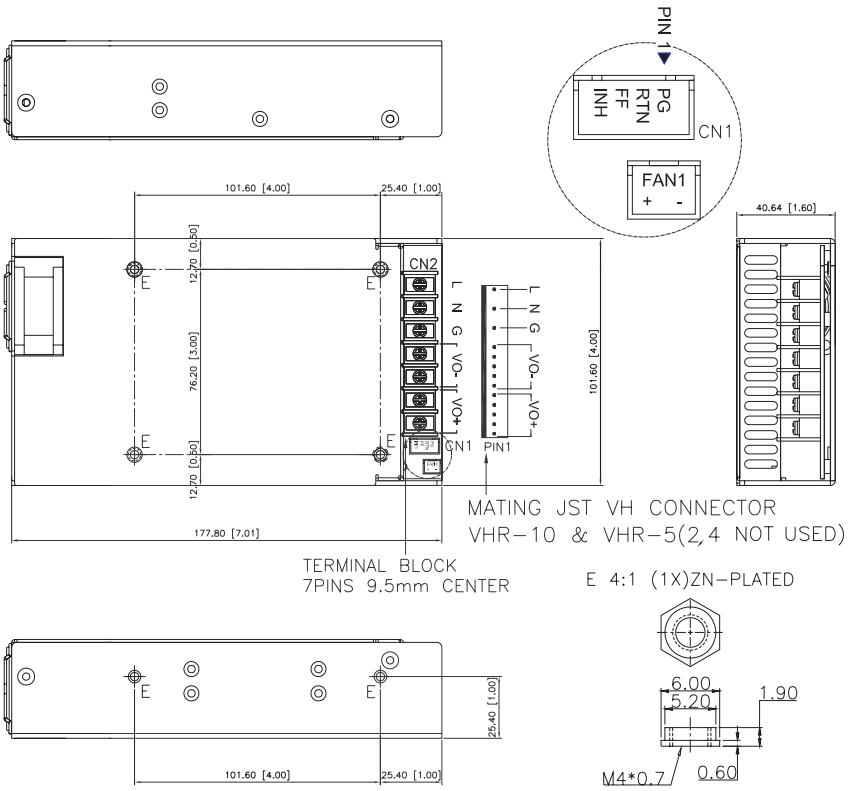
CFS

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1~2	+Vo	1~5	+Vo
3~4	-Vo	6~10	-Vo
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



Notes:
1. CN1 mates with JST XHP-4 or equivalent (CHYAO SHIUNN JS-2001-04) and JST SXH-002T-P0.6 mating pins (30~26 AWG).
2. CN2: Terminal Block option is Howder Part No. HD-121-7P. Header option mates with JST VHR-5 (input) and VHR-10 (output).
3. Fan drive connector (Fan1) mates with JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).
4. Mounting hole max screw depth is 2.0mm (M4x0.7 Inserts).

MECHANICAL DRAWING - DUAL OUTPUT MODELS

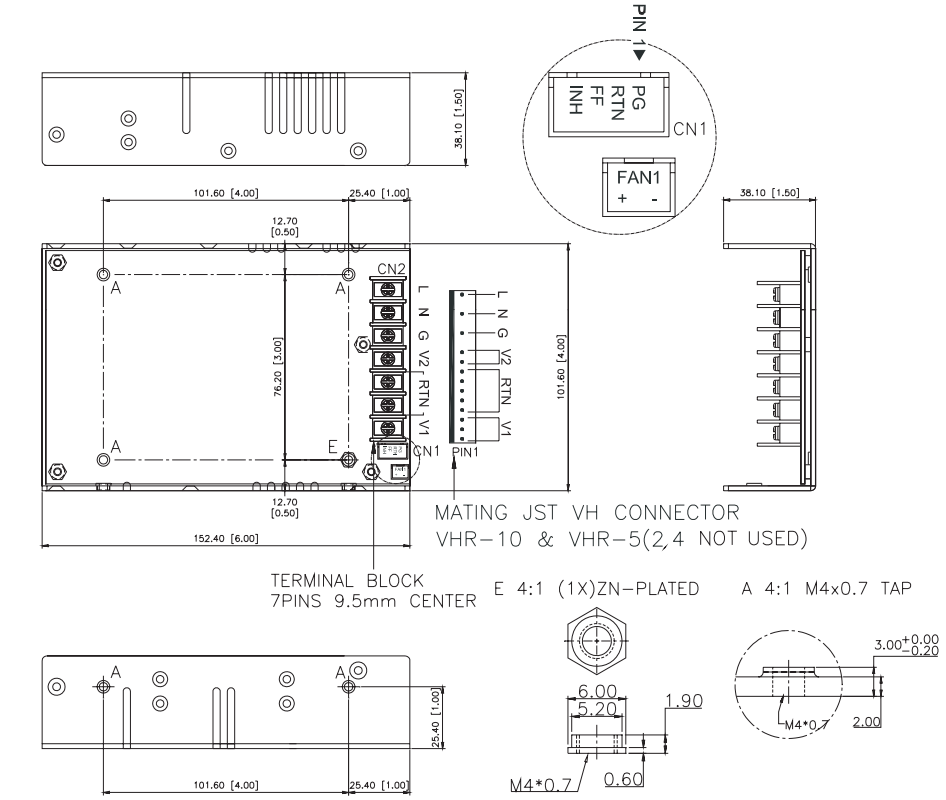
U-FRAME

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1	+Vo1	1~3	+Vo1
2~3	RTN	4~8	RTN
4	+Vo2	9~10	+Vo2
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



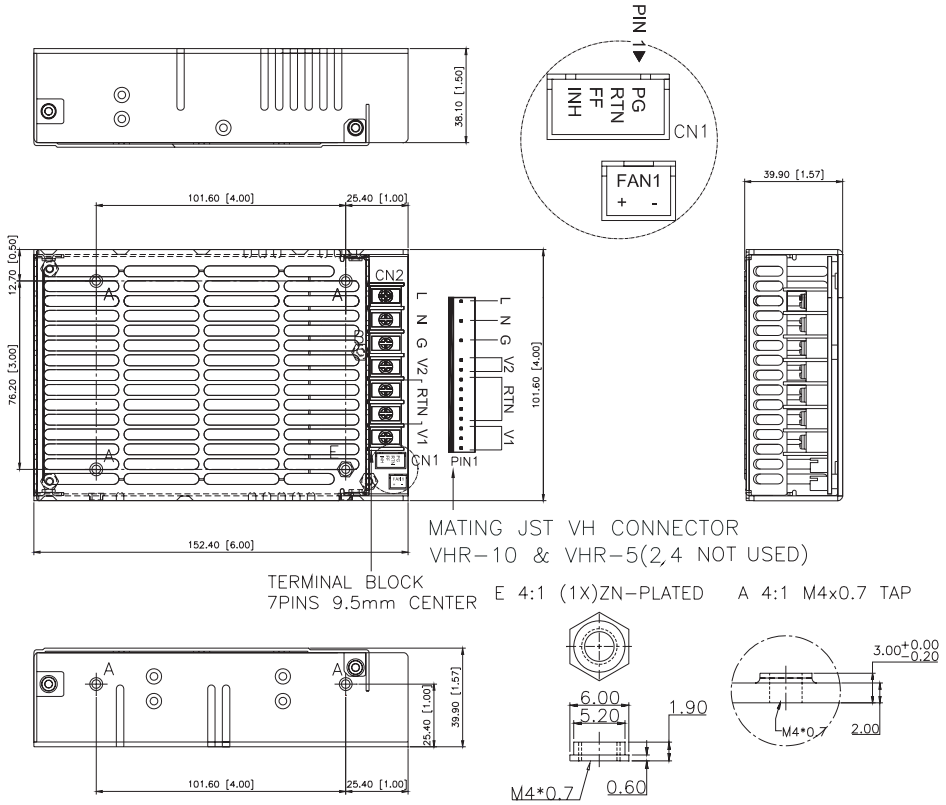
CNF

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1	+Vo1	1~3	+Vo1
2~3	RTN	4~8	RTN
4	+Vo2	9~10	+Vo2
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



Notes:
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4. Mounting hole max screw depth is 2.0mm (M4x0.7 Inserts).

MECHANICAL DRAWING - DUAL OUTPUT MODELS (CONTINUED)

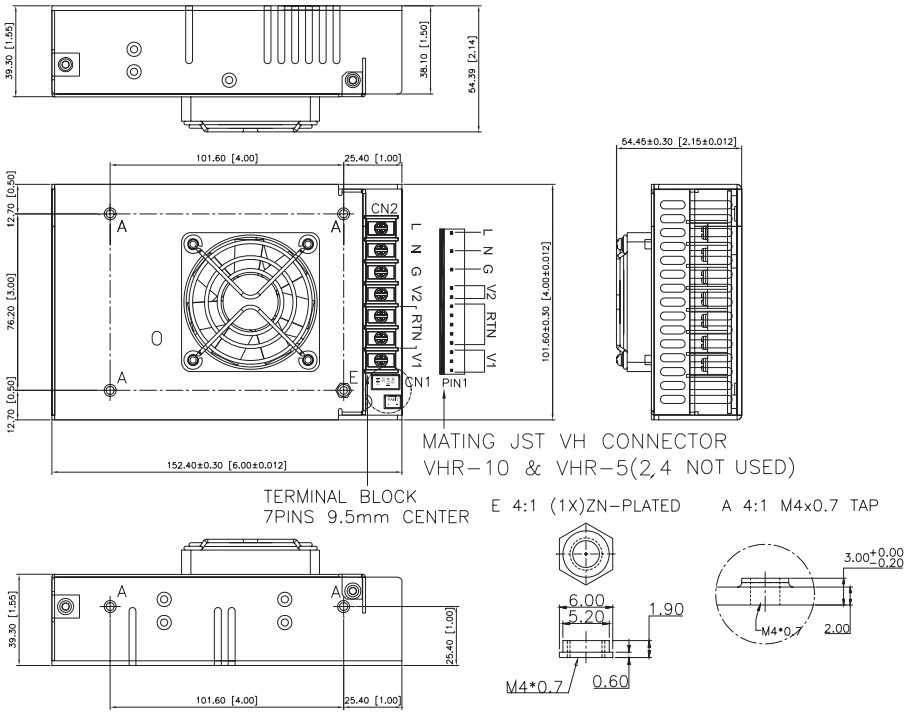
CF

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1	+Vo1	1~3	+Vo1
2~3	RTN	4~8	RTN
4	+Vo2	9~10	+Vo2
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



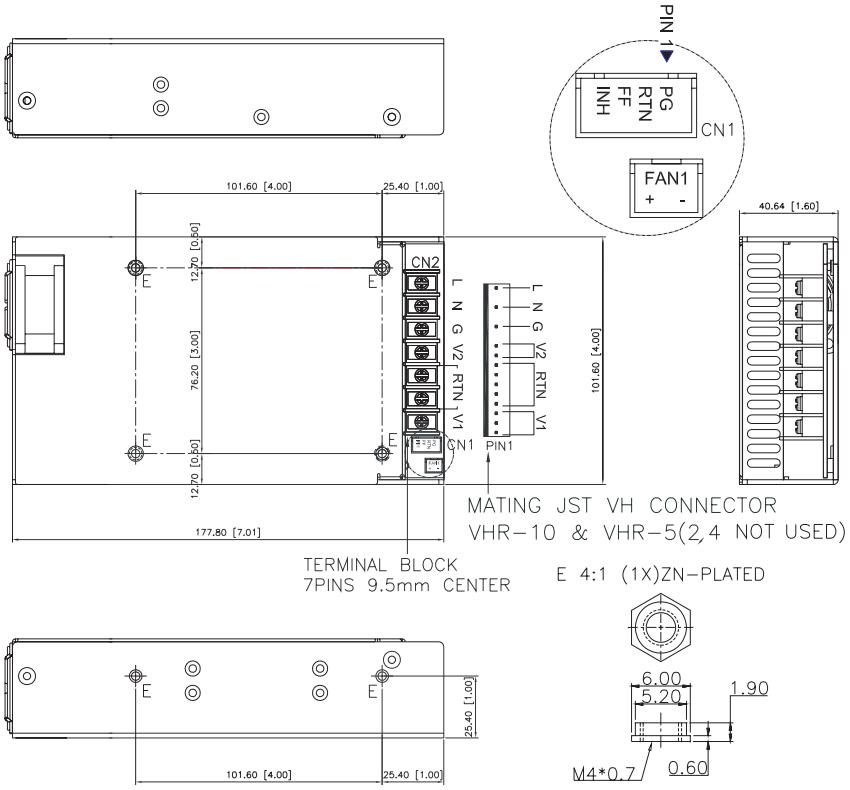
CFS

units: mm[inch]

CN1	
PIN	Function
1	PG
2	RTN
3	FF
4	INH

CN2			
Terminal Block		Header	
PIN	Function	PIN	Function
1	+Vo1	1~3	+Vo1
2~3	RTN	4~8	RTN
4	+Vo2	9~10	+Vo2
5	GND	12	GND
6	N	14	N
7	L	16	L

Fan1	
PIN	Function
1	+FAN
2	-FAN



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REVISION HISTORY

rev.	description	date
1.0	initial release	07/16/2014
1.01	updated datasheet	12/02/2014
1.02	company logo updated	02/05/2021
1.03	derating curve updated	04/21/2021
1.04	safeties updated	08/27/2021
1.05	discontinued model PCM-400-D0548	01/10/2022
1.06	discontinued model PCM-400-D0512 & PCM-400-D0524	06/02/2022

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

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