



# PDF700S CMFC(D/D-P) SERIES 700 WATT AC-DC POWER SUPPLY WITH PFC

## Features

- Universal Input Range 90~264Vac
- Efficiency up to 91.5%
- Class I
- Approval Safety IEC/EN/UL 62368-1 Ed 3.0
- Operating Altitude 5000m
- Remote On/Off
- Over Temperature Protection
- Over Voltage Protection
- Continuous Short Circuit Protection
- Chassis Mounting, Base Plate Cooled
- Built-In EMI Filter
- PDF700S-CMFD-P for Parallel Operation
- Compliance to CE102/RE101 of MIL-STD-461F



MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT NOTE 1	RIPPLE & NOISE NOTE 2	VOLTAGE ACCURACY NOTE 3	LINE REGULATION NOTE 4	LOAD REGULATION NOTE 4	%EFF. (Typ.) NOTE 5
PDF700S120-CMF□	12 V	58.4 A	120 mV	±1.0%	±0.5%	±0.5%	87.5%
PDF700S240-CMF□	24 V	29.2 A	240 mV	±1.0%	±0.5%	±0.5%	90%
PDF700S280-CMF□	28 V	25.0 A	280 mV	±1.0%	±0.5%	±0.5%	90.5%
PDF700S480-CMF□	48 V	14.6 A	480 mV	±1.0%	±0.5%	±0.5%	91%
PDF700S560-CMF□	56 V	12.5 A	560 mV	±1.0%	±0.5%	±0.5%	91.5%

Note:

1. When the baseplate temperature reaches 95°C, the unit will be OTP, the unit need sufficient convection and heat sink.
2. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to the output for ripple and noise measurement @20MHz BW.
3. Voltage accuracy is set at 60% load.
4. Line regulation is measured from 100V<sub>ac</sub> to 264V<sub>ac</sub> at full load. Load regulation is measured from 20% to 100% rated load.
5. Typical efficiency at 230V<sub>ac</sub> and full load at 25°C.
6. The CMFC series does not have a parallel function. If parallel operation is required, it is recommended to use the CMFD series with the CSC01 module or the CMFD-P series alone.
7. □ = C or D or D-P
8. When the PDF700S560-CMFD-P is in operation, detailed voltage specifications can be found in the **output characteristics** table.

## PART NUMBER

Series	Number of Outputs	Nominal Output Voltage	Chassis Mount Type	
PDF700	O	XXX	-YYY	Z
PDF700	S : Single	120 : 12V 240 : 24V 280 : 28V 480 : 48V 560 : 56V	-CMF : Chassis Mount built in Filter	C : Open Frame D : With Cover D-P : With Cover for Parallel



# PDF700S CMFC(D/D-P) Series

## TECHNICAL SPECIFICATIONS

			Typ.	Max.	Units
Input Voltage	Continuous	All	90	264	V <sub>ac</sub>
			120	370	V <sub>dc</sub>
Operating Case Temperature	Measured at the center of base plate	All	-40	95	°C
Storage Temperature		All	-55	105	°C
Operating Altitude		All		5000	m

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Operating Voltage Range		All	100		240	V <sub>ac</sub>
Input Frequency Range	47-63/440 Hz (Safety rating: 50/60 Hz)	All	47		440	Hz
Maximum Input Current	100% Load, V <sub>in</sub> =100V <sub>ac</sub>	All			9	A
Leakage Current		All			1	mA
Inrush Current	V <sub>in</sub> =240V <sub>ac</sub> , Cold Start at 25°C	All		35		A
Under Voltage Protection		All	63		77	V <sub>ac</sub>
Power Factor	230V <sub>ac</sub> /50Hz @ Full load	All		0.97		

	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Output Voltage Set Point	V <sub>in</sub> =115V <sub>ac</sub> and 230V <sub>ac</sub> , I <sub>o</sub> =60% I <sub>o max.</sub> , T <sub>c</sub> =25°C	120-CMFC(D)	11.88	12	12.12	V <sub>dc</sub>
		240-CMFC(D)	23.76	24	24.24	
		280-CMFC(D)	27.72	28	28.28	
		480-CMFC(D)	47.52	48	48.48	
		560-CMFC(D)	55.44	56	56.56	
	V <sub>in</sub> =115V <sub>ac</sub> and 230V <sub>ac</sub> , Load=0W, T <sub>c</sub> =25°C (The output voltage of 560-CMFD-P need to be adjusted downward to avoid OVP, e.g. 56.7V and 54V on this table.)	120-CMFD-P	12.53	12.6	12.67	V <sub>dc</sub>
		240-CMFD-P	25.07	25.2	25.33	
		280-CMFD-P	29.25	29.4	29.55	
		480-CMFD-P	50.14	50.4	50.66	
		560-CMFD-P	56.41	56.7	56.99	
	V <sub>in</sub> =115V <sub>ac</sub> and 230V <sub>ac</sub> , Load=600W, T <sub>c</sub> =25°C	120-CMFD-P	11.76	12	12.24	V <sub>dc</sub>
		240-CMFD-P	23.52	24	24.48	
		280-CMFD-P	27.44	28	28.56	
		480-CMFD-P	47.04	48	48.96	
		560-CMFD-P	52.92	54	55.08	
Operating Output Current Range	V <sub>in</sub> =115V <sub>ac</sub> and 230V <sub>ac</sub> , T <sub>c</sub> =25°C (When the PDF700S-CMFD-P is used in parallel, 85% of the total rated power is recommended)	120-CMFC(D)			58.4	A
		240-CMFC(D)			29.2	
		280-CMFC(D)			25.0	
		480-CMFC(D)			14.6	
		560-CMFC(D)			12.5	
		120-CMFD-P	50.0	58.4	A	
			240-CMFD-P	25.0		29.2
			280-CMFD-P	21.4		25.0
			480-CMFD-P	12.5		14.6
			560-CMFD-P	11.1		12.5
Holdup Time	V <sub>in</sub> =115V <sub>ac</sub> (refer to the application note)	All		16	ms	
Load Regulation	20% Load to 100% load	CMFC(D)			±0.5	%
	20% Load to 85.7% load (600W)	CMFD-P			±7	



# PDF700S CMFC(D/D-P) Series

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Line Regulation	$V_{in}$ =High line to low line	All			±0.5	%
Output Voltage Trim Range	$P_o \leq$ max. rated power, $I_o \leq I_{o\_max}$ . (refer to the application note)	560-CMFC(D) Others-CMFC(D)	-5		+1.8 +5	%
	No load, (refer to the application note)	560-CMFD-P Others-CMFD-P	0		+1.8 +5	
Over Current Protection	Hiccup mode, auto recovery	All	105		220	%
Over Voltage Protection	Latch off (recycle AC input to restart)	120-CMFC(D/D-P) 240-CMFC(D/D-P) 280-CMFC(D/D-P) 480-CMFC(D/D-P) 560-CMFC(D/D-P)			16.8 33.6 39.2 57.6 59.9	$V_{dc}$
Output Ripple and Noise	1. Add a 0.1uF ceramic capacitor and a 10uF aluminum electrolytic capacitor to output 2. Oscilloscope is 20MHz band width 3. Ambient temperature=25°C	120-CMFC(D/D-P) 240-CMFC(D/D-P) 280-CMFC(D/D-P) 480-CMFC(D/D-P) 560-CMFC(D/D-P)			120 240 280 480 560	mV
Load Capacitance	1. Input voltage is 115V <sub>ac</sub> and 230V <sub>ac</sub> 2. Output is max. load 3. Ambient temperature=25°C	120-CMFC(D/D-P) 240-CMFC(D/D-P) 280-CMFC(D/D-P) 480-CMFC(D/D-P) 560-CMFC(D/D-P)			58340 29170 25000 14590 12500	uF

PARAMETER	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Efficiency	1. Output is rated load 2. Input voltage is 230V <sub>ac</sub>	120-CMFC(D/D-P) 240-CMFC(D/D-P) 280-CMFC(D/D-P) 480-CMFC(D/D-P) 560-CMFC(D/D-P)		87.5 90 90.5 91 91.5		%

	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Input to Output	1 Minute (without dielectric breakdown)	All			3000	$V_{ac}$
Input to Earth (Ground)	1 Minute (without dielectric breakdown)	All			2000	$V_{ac}$
Output to Earth (Ground)	1 Minute (without dielectric breakdown)	All			500	$V_{ac}$
Isolation Resistance	Input to output	All	100			MΩ

	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
Switching Frequency		All		220		kHz
Over Temperature Shutdown	Measured at the center of base plate, auto recovery	All		105		°C
Over Temperature Recovery				100		
Series Operation	Refer to the application note	All		Possible		
Parallel Operation	Refer to the application note	CMFC(D) CMFD-P		Not recommended Possible		



# PDF700S CMFC(D/D-P) Series

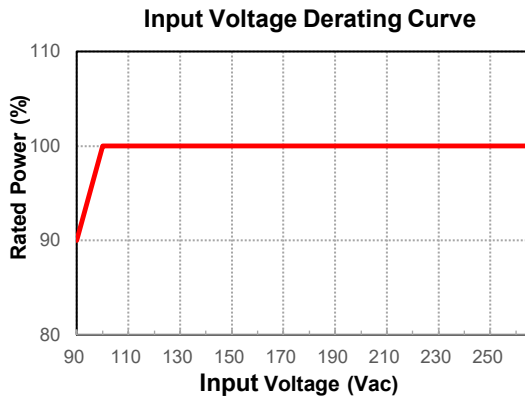
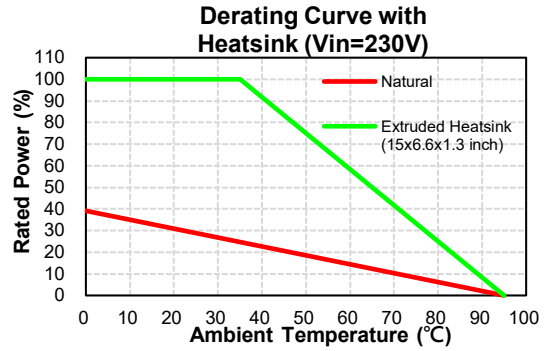
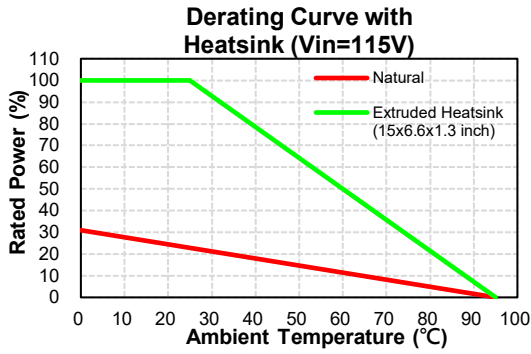
	NOTES and CONDITIONS	Device	Min.	Typ.	Max.	Units
MTBF	$I_0=100\%$ , $T_a=25^\circ\text{C}$ per MIL-HDBK-217F $I_0=100\%$ , $T_a=25^\circ\text{C}$ , Telcordia SR332	All	160 840			k hours
Humidity	Non-condensing	All			93	% RH
Shock	Meets MIL-STD-810F Table 516.5, Table 516.5-I 10ms, each axis 3 times ( $\pm X$ , $\pm Y$ , $\pm Z$ axis)	All		75		g
Vibration	Meets MIL-STD-810F Table 514.5C-VIII, 15~2000Hz, X, Y, Z axis, 1hr (each axis), total 3 hrs.	All		4		g
Weight		CMFC CMFD(D-P)		760 870		grams
Dimensions		CMFC CMFD(D-P)	9.45x4.33x1.587 Inches (240x110x40.30 mm) 9.45x4.33x1.654 Inches (240x110x42.00 mm)			
Case Material			Aluminum Base and Aluminum Cover			
<b>Safety</b>	Class I, IEC/EN/UL 62368-1					Ed 3.0
<b>EMC Emission</b>	EN 55032					Class A
Conducted Disturbance	EN 55032					Class A
Radiated Disturbance	EN 55032					Class A
	EN 61000-3-3:2013+A2:2021					
<b>EMC Immunity</b>						
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008, Air Discharge: $\pm 8\text{kV}$ Contact Discharge: $\pm 4\text{kV}$					Criterion A
Radio-Frequency, Continuous Radiated Disturbance	IEC 61000-4-3:2020					Criterion A
Electrical Fast Transient (EFT)	IEC 61000-4-4:2012, $\pm 1\text{kV}$ , $\pm 2\text{kV}$					Criterion A
Surge	IEC 61000-4-5:2014+A1:2017 L-N: $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$ , $\pm 2\text{kV}$ , L-E(ground): $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$ , $\pm 2\text{kV}$ , $\pm 4\text{kV}$					Criterion B ( $\pm 4\text{kV}$ )
Conducted Disturbances, Induced by RF Fields	IEC 61000-4-6:2013+COR1:2015					Criterion A
Power Frequency Magnetic Field	IEC 61000-4-8:2009					Criterion A
Voltage Dips	IEC 61000-4-11:2020, Dip: 30% Reduction, Dip >95% Reduction					Criterion A
Voltage Interruptions	IEC 61000-4-11:2020, >95% Reduction					Criterion B
Application Note Link						<a href="#">PDF700S CMFC(D/D-P) Series App Notes</a>



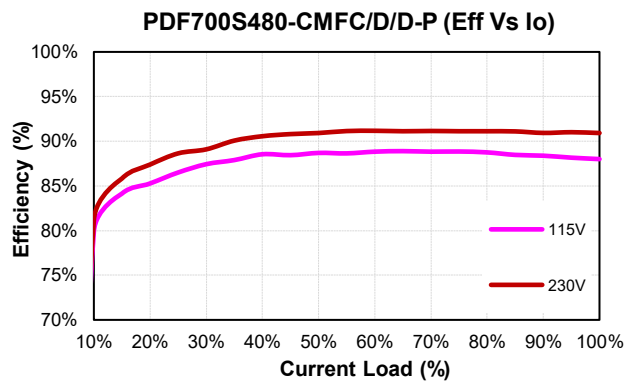
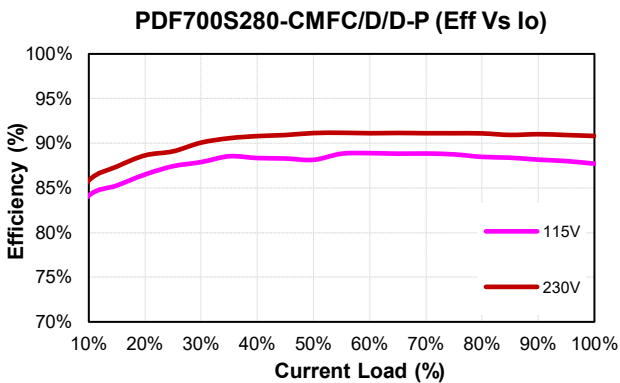
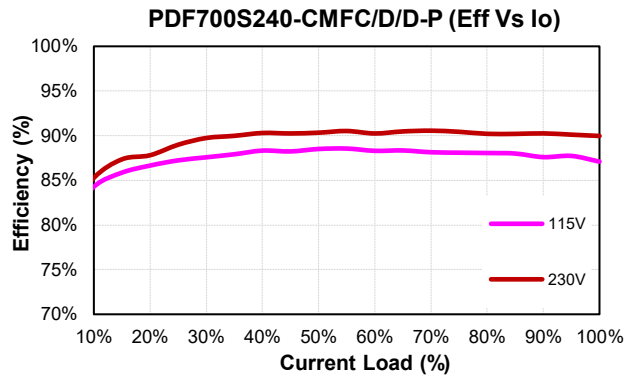
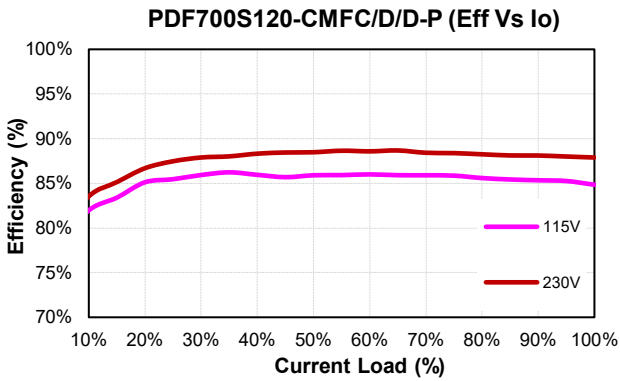
# PDF700S CMFC(D/D-P) Series

## CHARACTERISTIC CURVE

### Power Derating Curve



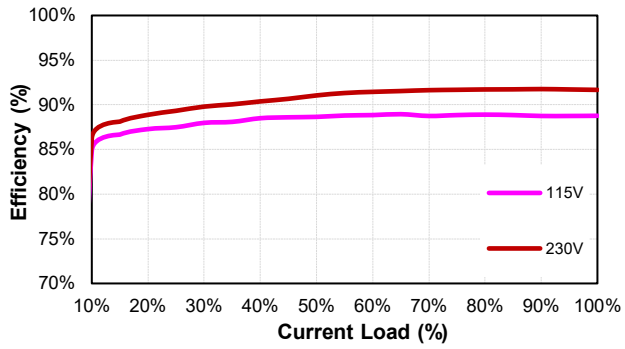
### Performance Data





# PDF700S CMFC(D/D-P) Series

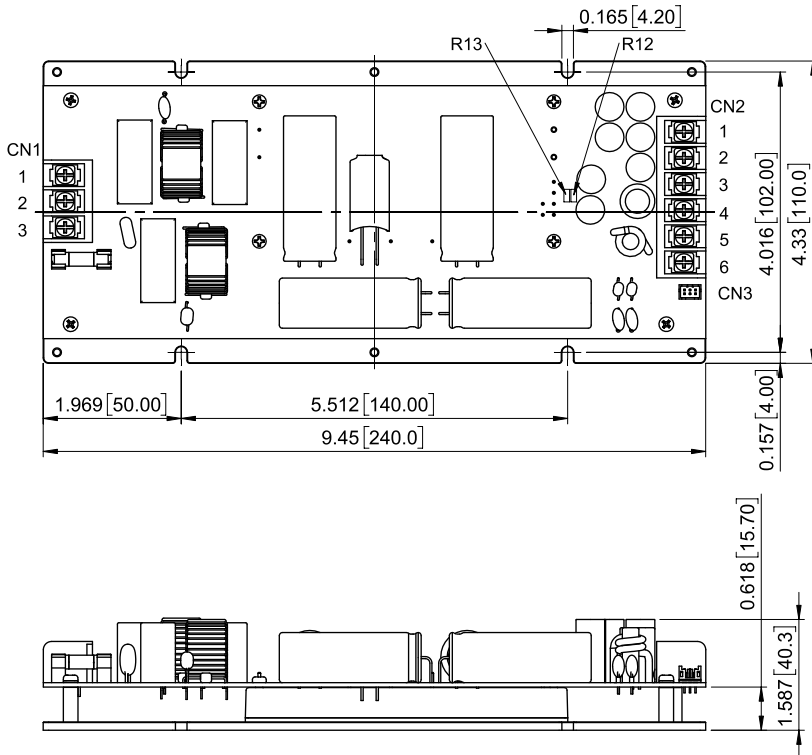
PDF700S560-CMFC/D/D-P (Eff Vs Io)





# PDF700S CMFC(D/D-P) Series

## MECHANICAL SPECIFICATION



### CMFC

All Dimensions in Inches[mm]  
 Tolerance Inches: x.xx=±0.03, x.xxx=±0.020  
 Millimeters: x.x=±0.7, x.xx=±0.50

AC Input Connector(CN1) :  
 DINKLE DT-49-B01W-03 or equivalent

Pin	Function	Mating Wire Range
1	FG	12~22 AWG
2	AC1	
3	AC2	

DC Output Connector(CN2) :  
 DINKLE DT-49-B01W-06 or equivalent

Pin	Function	Mating Wire Range
1	-Vo	12~22 AWG
2	-Vo	
3	-Vo	
4	+Vo	
5	+Vo	
6	+Vo	

DC Output Connector(CN3) :  
 LCU P220V-2x3 or equivalent

Pin	Function	Mating Housing	Terminal
1	ON/OFF+	LCU H220G1-2X3 or equivalent	LCU T220 or equivalent
2	IOG		
3	NC		
4	ON/OFF-		
5	NC		
6	NC		

### CMFD

All Dimensions in Inches[mm]  
 Tolerance Inches: x.xx=±0.03, x.xxx=±0.020  
 Millimeters: x.x=±0.7, x.xx=±0.50

AC Input Connector(CN1) :  
 DINKLE DT-49-B01W-03 or equivalent

Pin	Function	Mating Wire Range
1	FG	12~22 AWG
2	AC1	
3	AC2	

DC Output Connector(CN2) :  
 DINKLE DT-49-B01W-06 or equivalent

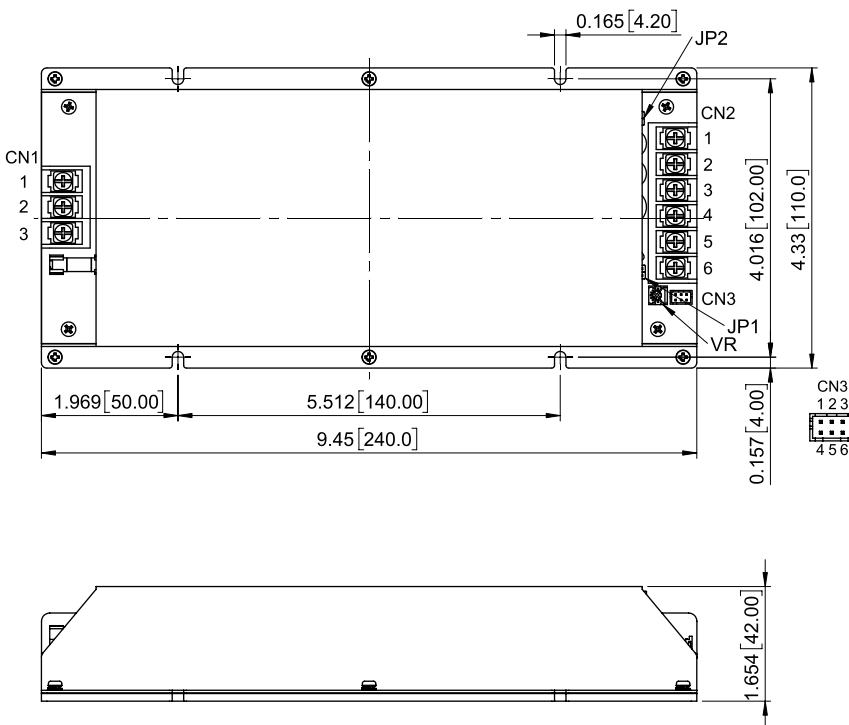
Pin	Function	Mating Wire Range
1	-Vo	12~22 AWG
2	-Vo	
3	-Vo	
4	+Vo	
5	+Vo	
6	+Vo	

DC Output Connector(CN3) :  
 LCU P220V-2x3 or equivalent

Pin	Function	Mating Housing	Terminal
1	TRIM	LCU H220G1-2X3 or equivalent	LCU T220 or equivalent
2	-S		
3	ON/OFF-		
4	IOG		
5	+S		
6	ON/OFF+		

DC Output Connector(JP1&JP2) :  
 LCU P301G-02-G1 or equivalent

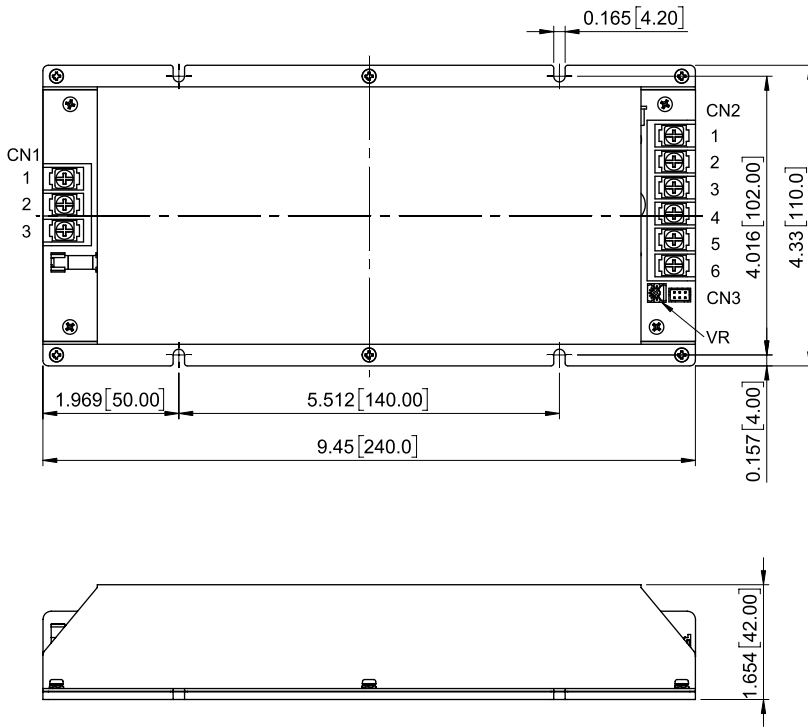
Pin	Function	Mating Housing	Terminal
JP1	Short +S&+Vo	LCU H301G-02 or equivalent	LCU T306 or equivalent
JP2	Short -S&-Vo		





# PDF700S CMFC(D/D-P) Series

## MECHANICAL SPECIFICATION



### CMFD-P

All Dimensions in Inches[mm]  
 Tolerance Inches: x.xx=±0.03, x.xxx=±0.020  
 Millimeters: x.x=±0.7, x.xx=±0.50

AC Input Connector(CN1) :  
 DINKLE DT-49-B01W-03 or equivalent

Pin	Function	Mating Wire Range
1	FG	12~22 AWG
2	AC1	
3	AC2	

DC Output Connector(CN2) :  
 DINKLE DT-49-B01W-06 or equivalent

Pin	Function	Mating Wire Range
1	-Vo	12~22 AWG
2	-Vo	
3	-Vo	
4	+Vo	
5	+Vo	
6	+Vo	

DC Output Connector(CN3) :  
 LCU P220V-2x3 or equivalent

Pin	Function	Mating Housing	Terminal
1	-Vo	LCU H220G1-2X3 or equivalent	LCU T220 or equivalent
2	NC		
3	ON/OFF-		
4	IOG		
5	NC		
6	ON/OFF+		