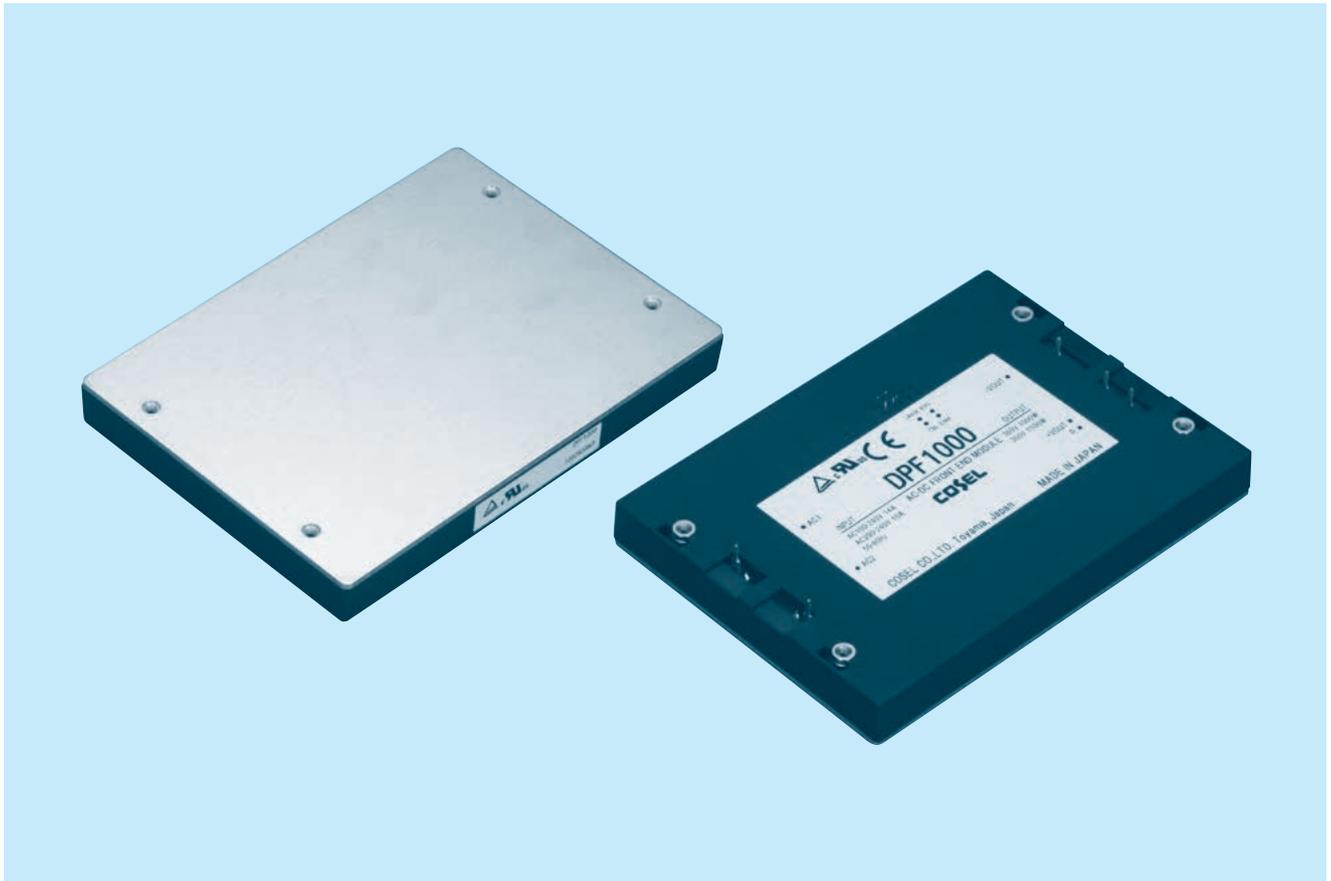




DPF-series



■ Power factor correction module

■ Feature

- Harmonic attenuator (Complies with IEC61000-3-2)
- High efficiency 90% (AC100V), 95% (AC200V)
- Universal input voltage (AC85 - 264V)
- Built-in inrush current protection
- Parallel operation is possible (Built-in current balancing function)
- Built-in overvoltage and thermal protection circuits
- Inverter operation monitoring (IOG)
- Enable signal (ENA)
- Auxiliary power supply for external signal (AUX)
- Ideal for distributed power systems

■ 5-year warranty

■ CE marking

- Low Voltage Directive
- RoHS Directive

■ UKCA marking

- Electrical Equipment Safety Regulations
- RoHS Regulations

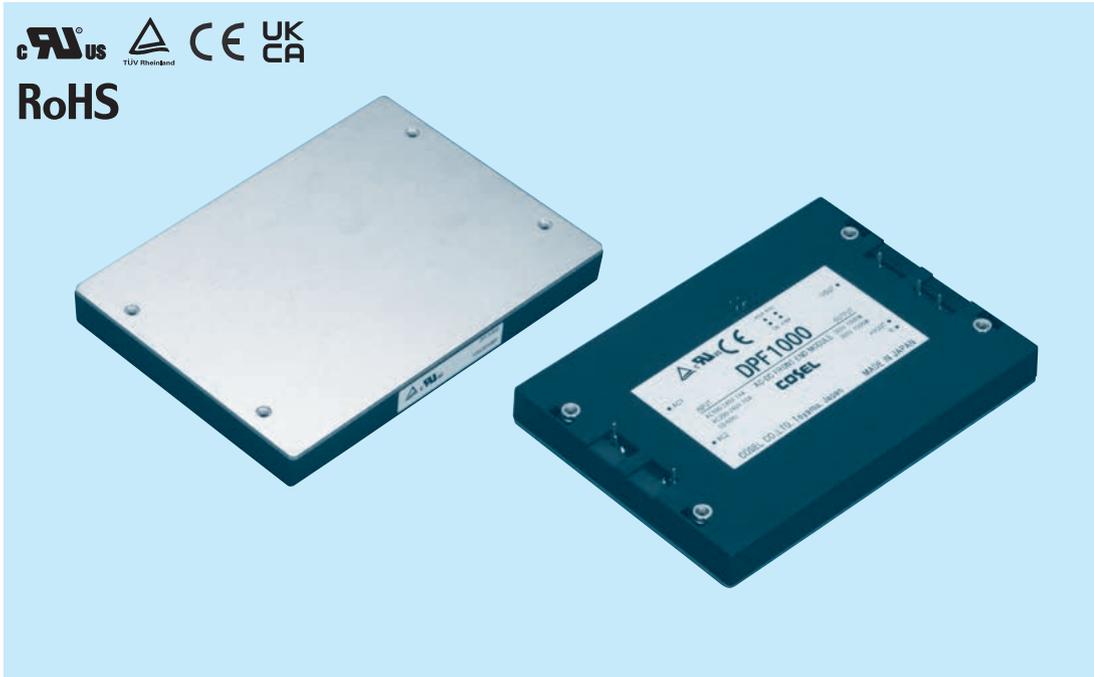
■ Safety agency approvals

- UL, C-UL recognized, TÜV approved

DPF1000

DPF 1000

① ②



① Series name
② Output wattage

MODEL	DPF1000	
AC INPUT[V]	AC85 - 264	AC170 - 264
MAX OUTPUT WATTAGE[W]	1,000	1,500
DC OUTPUT VOLTAGE[V]	DC360	

SPECIFICATIONS

	MODEL	DPF1000
INPUT	VOLTAGE[V]	AC85 - 264 1 φ
	POWER FACTOR CORRECTION RANGE[V]	AC85 - 255 1 φ
	CURRENT[A]	11.5typ (ACIN 100V)
	FREQUENCY[Hz]	50/60 (47 - 63)
	INRUSH CURRENT[A]	Limited by external resistance
	EFFICIENCY[%]	90typ (ACIN 100V)
	POWER FACTOR	0.98typ (ACIN 100V)
	LEAKAGE CURRENT[ma]	0.75max (60Hz, According to IEC62368-1 and DEN-AN)
OUTPUT	WATTAGE[W] *1	1,000
	VOLTAGE[V] *2	DC360
	VOLTAGE ACCURACY[V] *3	±20
PROTECTION CIRCUIT AND OTHERS	OVERVOLTAGE PROTECTION[V]	DC400 - 450 The power factor corrector function stops
	IOG	Inverter operation monitoring, Open-collector output, Maximum sink current 10mA, Maximum allowance voltage 35V
	ENA	Enable signal, Open-collector output, Maximum sink current 10mA, Maximum allowance voltage 35V
	AUX	Auxiliary power supply for external signal, Output voltage:6.5 - 8.5V maximum, Output current:10mA
ISOLATION	OTHERS	Parallel operation possible (Current balancing function), N+1 redundant operation possible, Thermal protection
	INPUT-OUTPUT	Non isolated
ENVIRONMENT	INPUT, OUTPUT-FG	AC3,000V 1minute Cutoff current = 10mA, DC500V, 50MΩmin (20±15°C)
	OPERATING TEMP.HUMID.AND ALTITUDE *4	-20 to +85°C (Aluminum base plate), 20 - 95%RH (Non condensing) (Refer to "Derating"), 3,000m (10,000feet) max
	STORAGE TEMP.HUMID.AND ALTITUDE	-40 to +85°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max
	VIBRATION	10 - 55Hz, 49.0m/s ² (5G), 3minutes period, 60minutes each along X, Y and Z axis
SAFETY	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis
	AGENCY APPROVALS	UL60950-1, C-UL, EN62368-1 Complies with DEN-AN and IEC62368-1
OTHERS	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 *5
	CASE SIZE/WEIGHT	118.6 × 12.7 × 85mm [4.67 × 0.5 × 3.35 inches] (W × H × D) /200g max
	COOLING METHOD	Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)

*1 Refer to "Derating".

*2 When the input voltage is more than 255V, the power factor corrector function stops, and the output voltage becomes rectified AC input voltage.

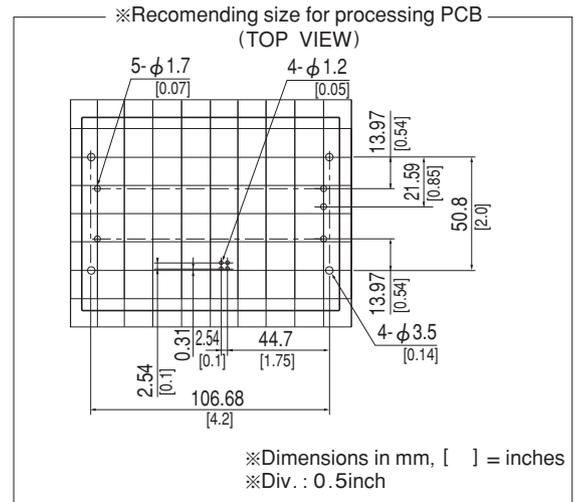
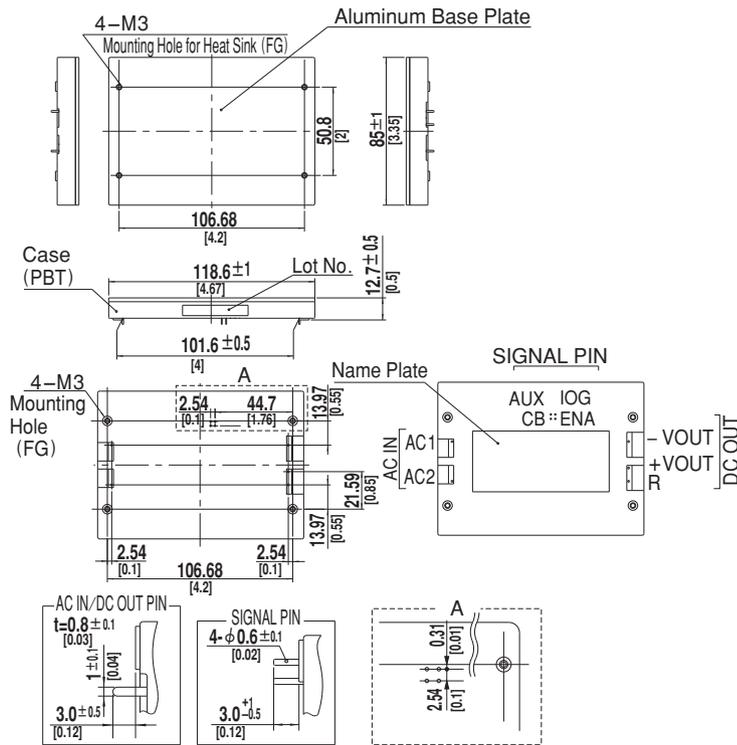
*3 The value included the output setting and the line regulation, the load regulation and the temperature regulation.
However, the input voltage is in the power factor correction range.

*4 Please consult us in regard to use from -40°C.

*5 Please contact us about class C.

* External components are required. Refer to standard connection method.

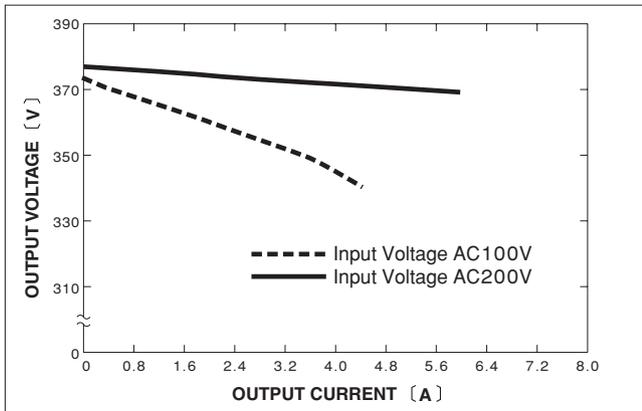
External view



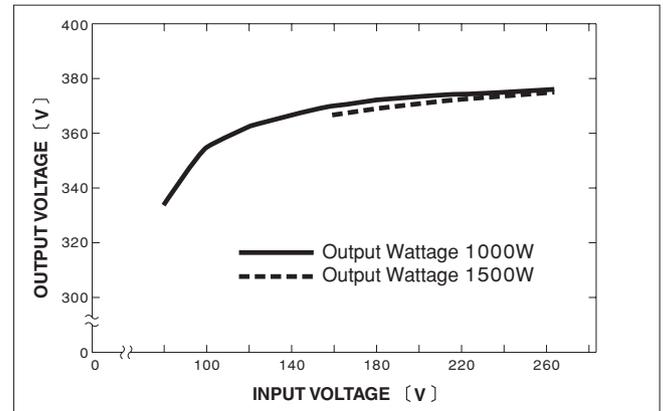
- ※Weight: 200g max
- ※Tolerance: ± 0.3 [± 0.012]
- ※Dimensions in mm, [] = inches
- ※Base Plate: Aluminum
- ※Mounting torque
- Mounting hole screwing torque 0.49N·m (5.0kgf·cm) max

Performance data

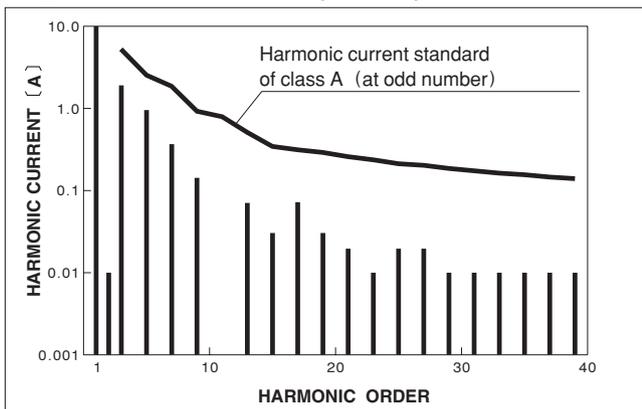
■ STATIC CHARACTERISTICS



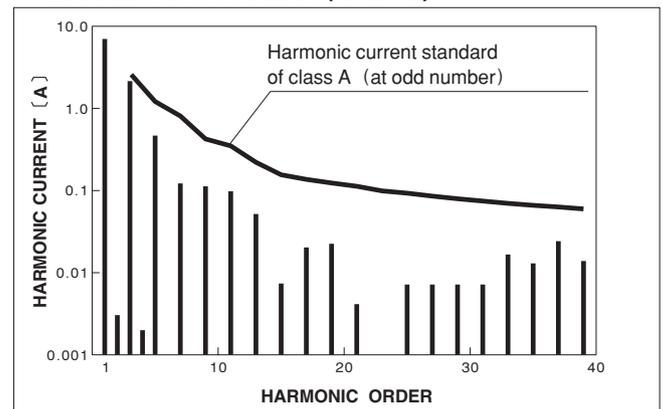
■ OUTPUT VOLTAGE FOR INPUT



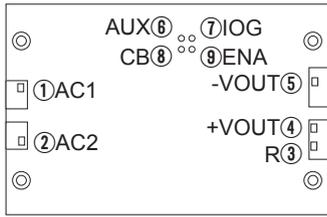
■ HARMONIC CURRENT (AC100V)



■ HARMONIC CURRENT (AC230V)



Pin Configuration



★ Bottom View

No.	Pin connection	Function
①	AC1	AC Input
②	AC2	
③	R	External resistor for inrush current protection
④	+VOUT	+DC Output
⑤	-VOUT	-DC Output
⑥	AUX	Auxiliary power supply for external signal
⑦	IOG	Inverter operation monitor
⑧	CB	Current balance
⑨	ENA	Enable signal

Implementation • Mounting Method

Installation method

- Use with the conduction cooling (e.g. heat dissipation from the aluminum base plate to the attached heat sink).
- Unless the baseplate and the heat sink are placed in close contact with each other, contact thermal resistance will increase until heat dissipation becomes insufficient. Always use either thermal grease or a thermal sheet.
- If processing thermal grease, apply it thinly and evenly.
- Also, when processing the thermal sheet, make a hole according to the position of the screw.
- If the four corners are cut as shown in the figure below, stress may be applied to the edges of the base plate during fixing, which may damage the built-in parts, so avoid such processing.

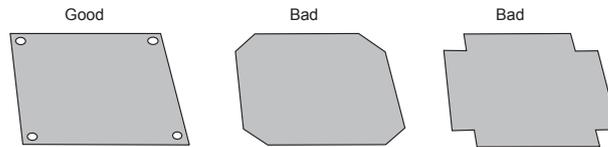
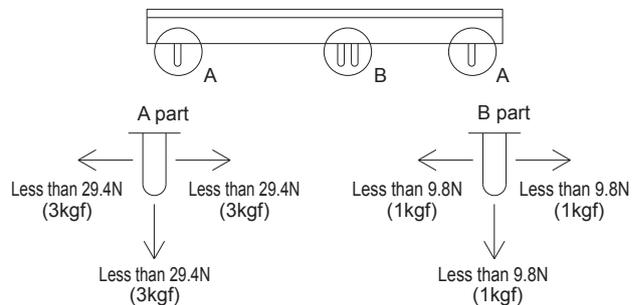


Image of using thermal sheet and precautions when processing

- The unit can be mounted in any direction. When two or more power supplies are used side by side, position them with proper intervals to allow enough air ventilation. Aluminum base plate temperature around each power supply should not exceed the temperature range shown in derating curve.
- Avoid placing the AC input line pattern lay out underneath the unit, it will increase the line conducted noise. Make sure to leave an ample distance between the line pattern lay out and the unit. Also avoid placing the DC output line pattern of DC-DC converter underneath the unit because it may increase the output noise. Lay out the pattern away from the unit.
- High-frequency noise radiates directly from the unit to the atmosphere. Therefore, design the shield pattern on the printed circuit board and connect its one to FG. The shield pattern prevents noise radiation.

Stress onto the pins

- When too much stress is applied to the pins of the power supply, the internal connection may be weakened. As shown in right figure avoid applying stress of more than 29.4N(3kgf) on the input pins/output pins(A part) and more than 9.8N(1kgf) to the signal pins(B part).
- The pins are soldered on PCB internally, therefore, do not pull or bend them with abnormal forces.
- Fix the unit on PCB(fixing fittings) to reduce the stress onto the pins.



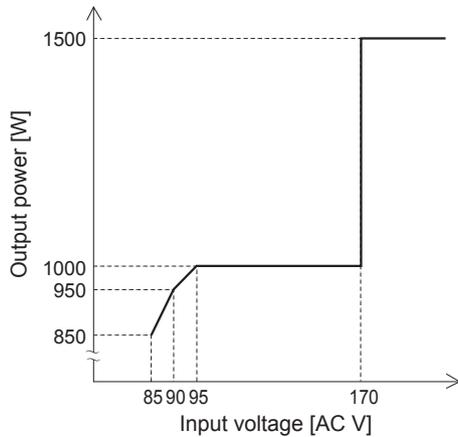
Soldering

- Flow soldering : 260°C less than 15 seconds.
- Soldering iron
 - AC IN/DC OUT/R pins : 450°C less than 5 seconds.
 - Signal pins : 350°C less than 3 seconds(less than 20W)

Derating

Derating curve for input voltage

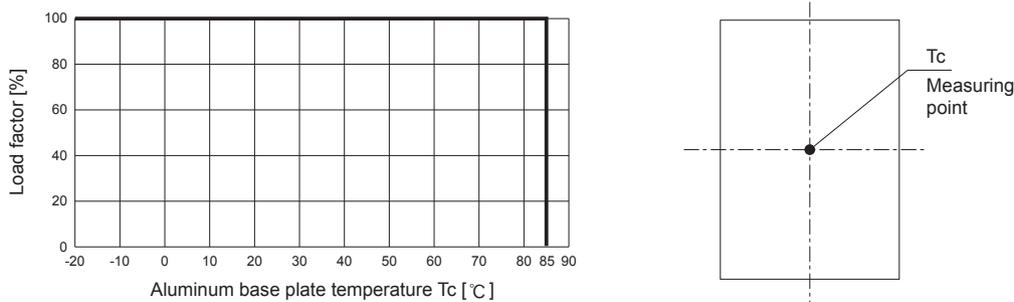
Below shows rated output for each input voltage section. Maximum output should be within this range.



Output voltage derating curve

Use with the conduction cooling (e.g. heat radiation by conduction from the aluminum base plate to the attached heat sink). Below shows the derating curve based on the aluminum base plate temperature. In the hatched area, the specification of Ripple and Ripple Noise is different from other areas.

It is necessary to note thermal fatigue life by power cycle. Please reduce the temperature fluctuation range as much as possible when the up and down of temperature are frequently generated. Contact for more information on cooling methods.



Instruction Manual

It is necessary to read the "Instruction Manual" and "Before using our product" before you use our product.

Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current [A]	Rated input fuse	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
DPF1000	Active filter	130	11.5 *1	-	SCR	Aluminum	Yes		No	Yes
			8.5 *2							

*1 The value of input current is at ACIN 100V and 1000W load.
 *2 The value of input current is at ACIN 200V and 1500W load.