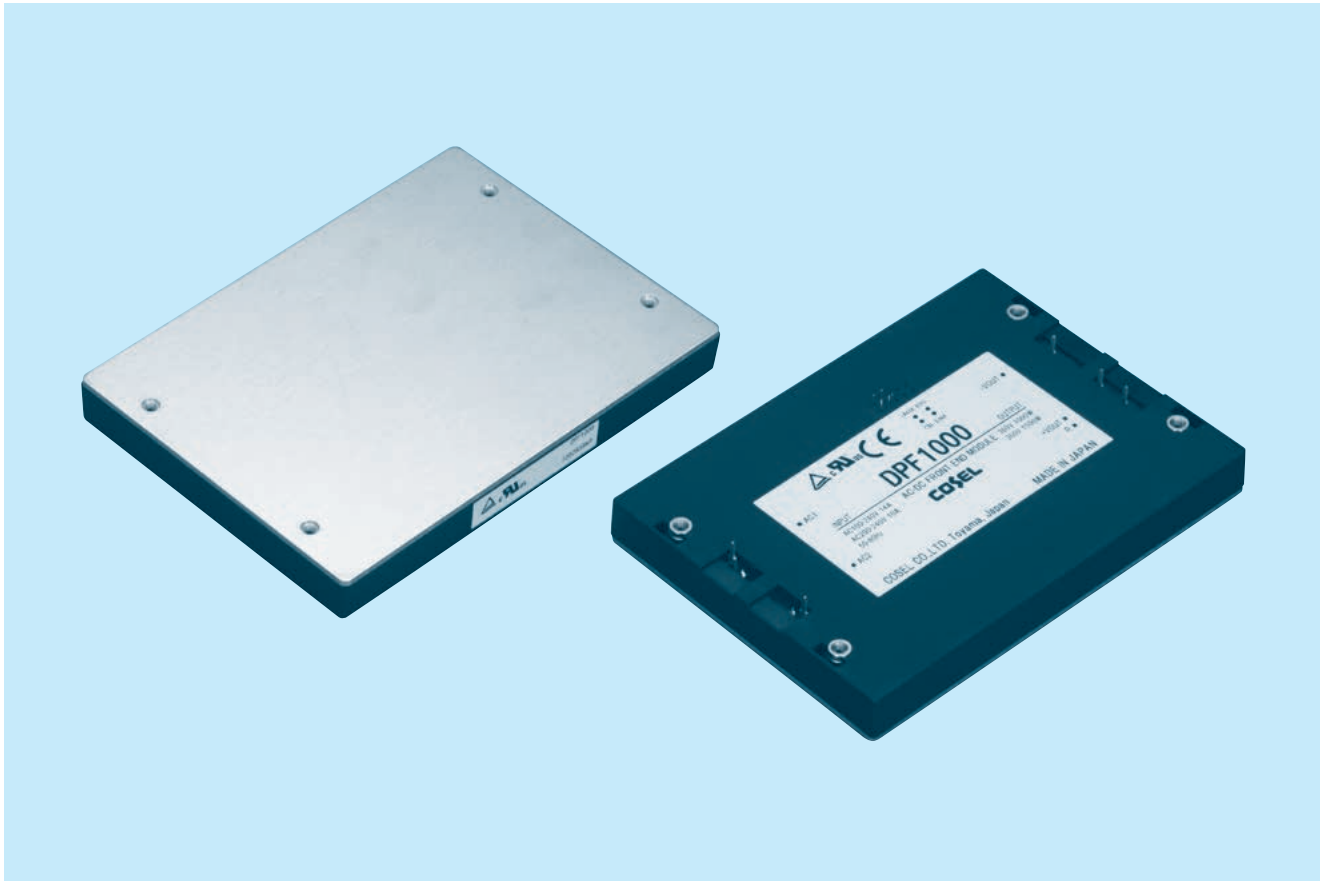
Power Factor Correction | World wide | Low Profile | Safety Approvals | Inrush current limiting | OVP | Parallel Operation

# 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

## Safety agency approvals

UL, C-UL recognized, TÜV approved

COSEL AC-DC Power Supplies Bus Converter·Power Module Type

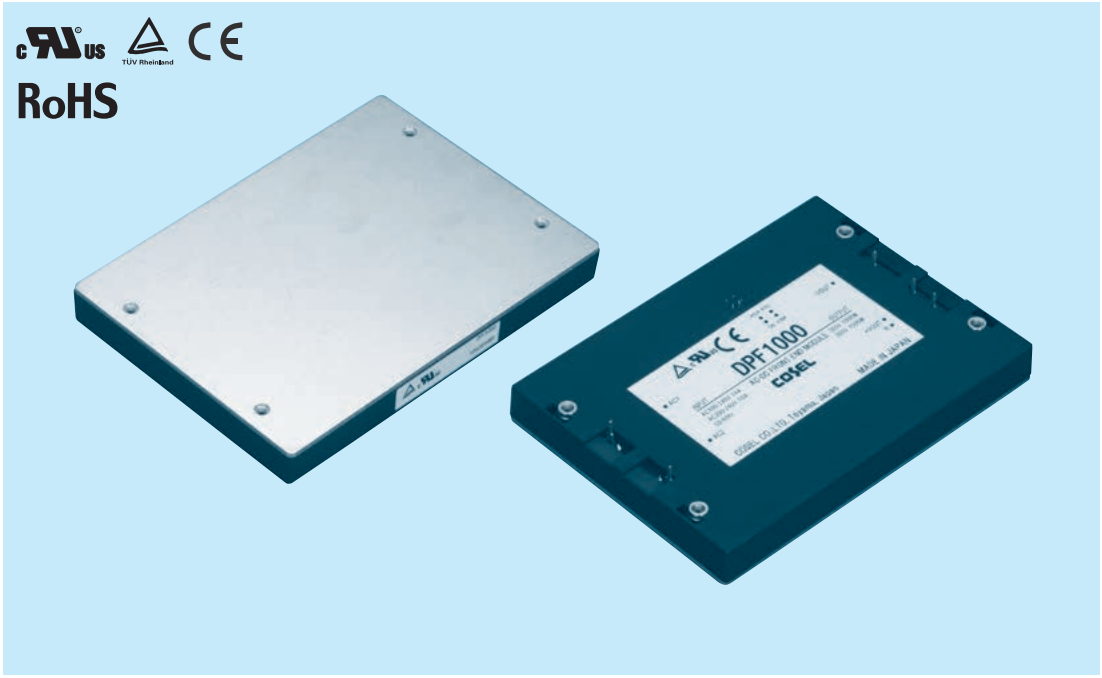
# DPF1000

**Ordering information**

**DPF 1000**

① ②

①Series name
②Output wattage



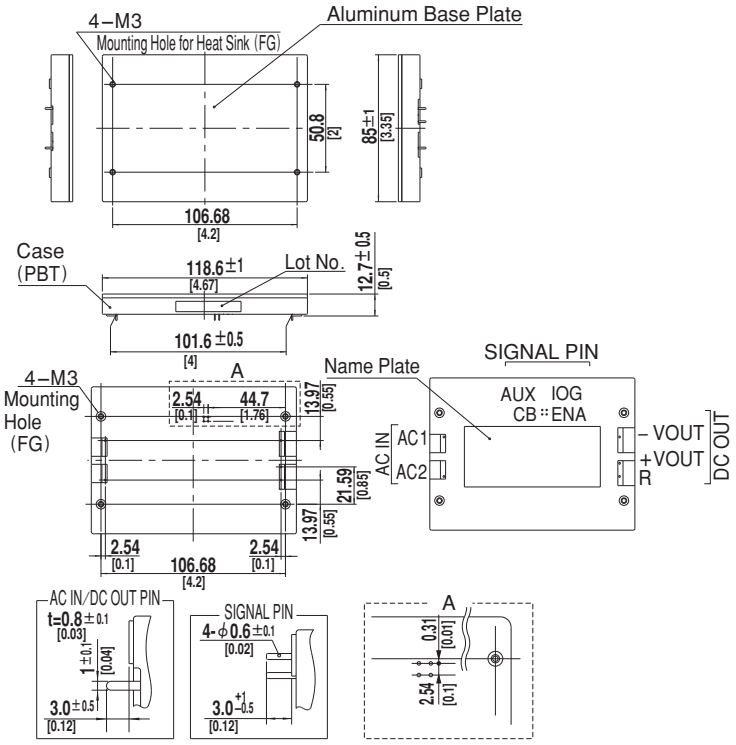

| MODEL | DPF1000 | |
|---|---|---|
| AC INPUT[V] | AC85 - 264 | AC170 - 264 |
| MAX OUTPUT WATTAGE[W] | 1,000 | 1,500 |
| DC OUTPUT VOLTAGE[V] | DC360 | |

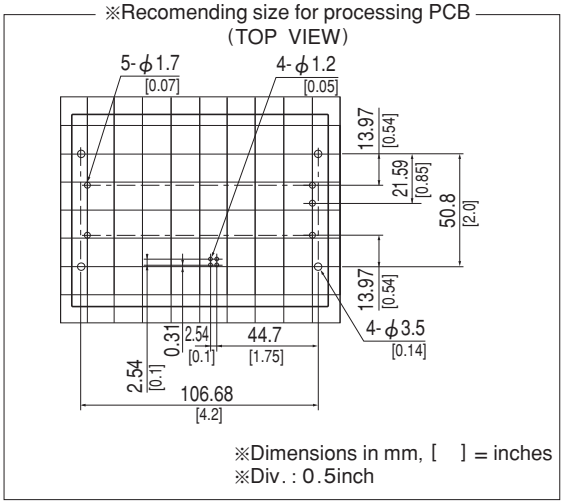
## SPECIFICATIONS

| | MODEL | DPF1000 | |
|---|---|---|---|
| INPUT | VOLTAGE[V] | AC85 - 264 1φ | AC170 - 264 1φ |
| | POWER FACTOR CORRECTION RANGE[V] | AC85 - 255 1φ | |
| | CURRENT[A] | 11.5typ (ACIN 100V) | 8.5typ (ACIN 200V) |
| | FREQUENCY[Hz] | 50/60 (47 - 63) | |
| | INRUSH CURRENT[A] | Limited by external resistance | |
| | EFFICIENCY[%] | 90typ (ACIN 100V) | 95typ (ACIN 200V) |
| | POWER FACTOR | 0.98typ (ACIN 100V) | 0.95typ (ACIN 200V) |
| | LEAKAGE CURRENT[mA] | 0.75max (60Hz, According to IEC60950 and DEN-AN) | |
| OUTPUT | WATTAGE[W] *1 | 1,000 | 1,500 |
| | 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 | |
| | OTHERS | Parallel operation possible (Current balancing function), N+1 redundant operation possible, Thermal protection | |
| ISOLATION | INPUT-OUTPUT | Non isolated | |
| | INPUT, OUTPUT-FG | AC3,000V 1minute Cutoff current = 10mA, DC500V, 50MΩmin (20±15℃) | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE *4 | -20 to +85℃ (Aluminum base plate), 20 - 95%RH (Non condensing) (Refer to "Derating"), 3,000m (10,000feet) max | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 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 | |
| | IMPACT | 196.1m/s$^2$ (20G), 11ms, once each X, Y and Z axis | |
| SAFETY | AGENCY APPROVALS | UL60950-1, C-UL, EN60950-1 Complies with DEN-AN and IEC60950-1 | |
| | HARMONIC ATTENUATOR | Complies with IEC61000-3-2 *5 | |
| OTHERS | 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℃.
*5 Please contact us about class C.
* External components are required. Refer to standard connection method.

## External view

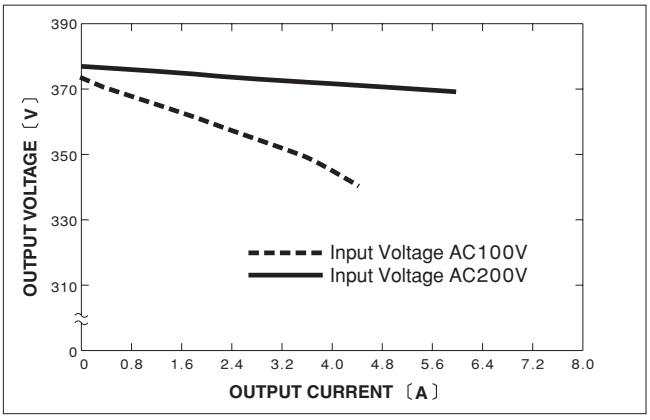


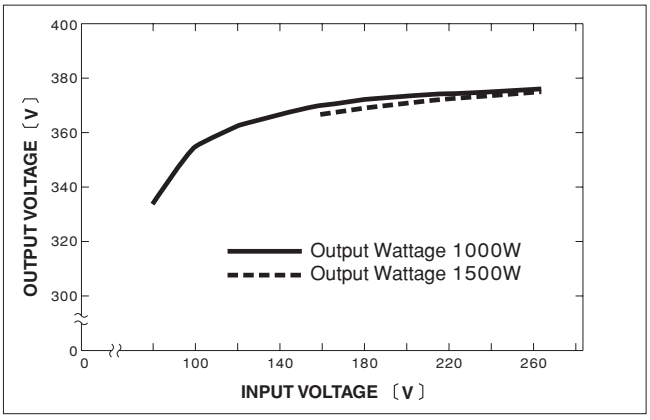

※Weight: 200g max
※Tolerance: ±0.3 [±0.012]
※Dimensions in mm, [ ] = inches
※Base Plate: Aluminum
※Mounting torque
• Mounting hole screwing torque 0.49N•m (5.0kgf•cm) max

## Performance data

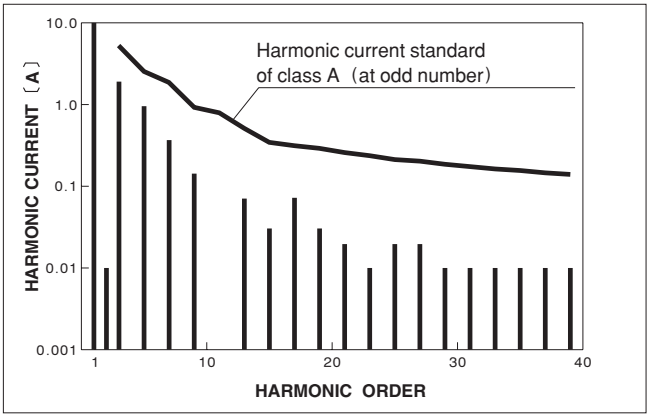
### ■STATIC CHARACTERISTICS



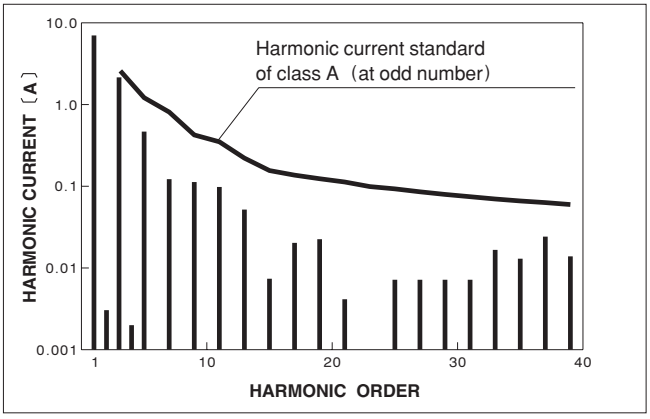

### ■OUTPUT VOLTAGE FOR INPUT



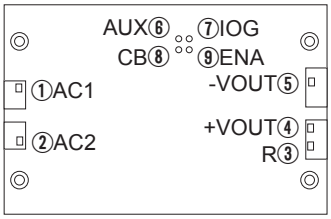

### ■HARMONIC CURRENT (AC100V)




### ■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 |
| ⑧ | 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

■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.

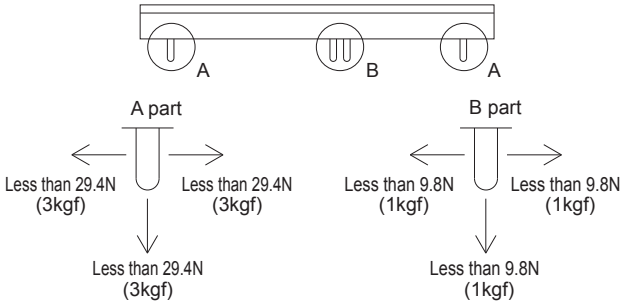
■High-frequency noise radiates directly from the unit to the atmo- sphere. Therefore, design the shield pattern on the printed circuit board and connect its one to FG. The shield pattern prevents noise radiation.

### 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℃ less than 15 seconds.

■Soldering iron

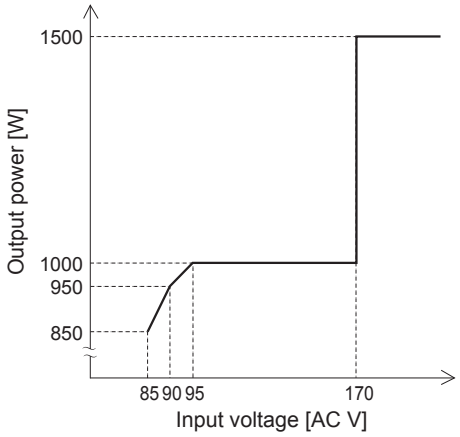
AC IN/DC OUT/R pins : 450℃ less than 5 seconds.

Signal pins : 350℃ less than 3 seconds(less than 20W)

## Derating

### Derating curve for input voltage

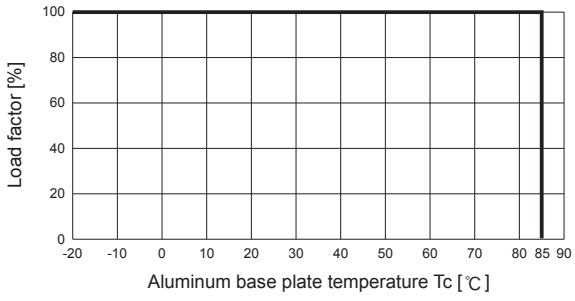
■Below shows rated output for each input voltage section. Maximum output should be within this range.

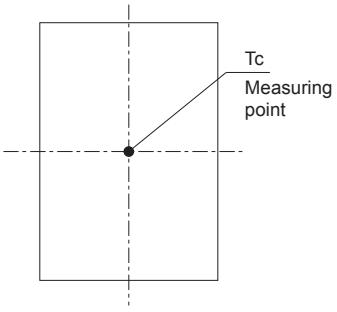



### Output voltage derating curve

■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 neccessary to read the “Instruction Manual” and “Before using our product” before you use our product.

Instruction Manual https://en.cosel.co.jp/product/powersupply/DPF/
Before using our product https://en.cosel.co.jp/technical/caution/index.html

DPF NOTICE

## 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<br>8.5 ∗2 | - | SCR | Aluminum | Yes | | No | Yes |

∗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.

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