

**Features**

EPW30-48A-E power module (module for short) uses soft-switching and input / output soft start-up technology. Its output can be regulated through monitoring. Multiple modules can be paralleled to share the load.

Dimensions (H × W × D): 88.2mm × 102.8mm (105.5mm with enclosure) × 242.3mm (excluding socket dimension)

Weight: < 3kg

Mechanical stress: ETS300019-2

Safety: Designed to meet UL950, EC60950/EN60950, CSA C22-2 NO.950 and GB4943: 2001

**Environment**

Operation temperature: -33 to 55 °C

Storage temperature: -40 to 70 °C

Humidity: 5 ~ 95% (non-condensing)

Air pressure: 86 ~ 106 kPa

Altitude: < 3000m

Cooling: built-in fan, forced convection

Vibration: random vibration in 2 ~ 500Hz in three orthogonal axes, 30 minutes in each direction

**Electrical Specs**

**Input**

Rated input: 200 ~ 240Vac / 115 ~ 130Vac

Input current: 12A max. for single module

Rated frequency: 50 / 60Hz

Power factor: no less than 99% (rated operation condition)

**Output**

Rated output: 53.5Vdc (output range: 44~ 58Vdc)

Output power: 1600W (176 ~ 300Vdc)

700W (150 ~ 175Vdc)

600W (90 ~ 150Vdc)

Efficiency: ≥ 91% (220Vac input)

≥ 83% (110Vac input)

Line regulation: ≤ ± 1%; Load regulation: ≤ ± 1%

Mains regulation: ≤ ± 0.1%

Psophemetic noise: ≤ 2mV

Broadband noise: ≤ 100mV (3.4kHz ~ 150kHz)

≤ 30mV (150kHz ~ 30MHz)

Output ripple (p-p): ≤ 200mV (0 ~ 20MHz bandwidth)

Discrete noise: ≤ 5mV (3.4kHz ~ 150kHz)

≤ 3mV (150kHz ~ 200kHz)

≤ 2mV (200kHz ~ 500kHz)

≤ 1mV (500kHz ~ 30MHz)

**Protection**

Input OVP	The module will send alarm and shutdown when the input is above 305Vac; and recover when the input drops down 300Vac
Input UVP	The module will send alarm and shutdown when the input is below 85Vac; and recover when the input increases above 90Vac
Output OVP	The output OVP point is 58.5 ~ 60.5Vdc. The module will shutdown to lock upon the over-voltage status. Restart the module after OVP protection is removed .
Current limit protection	The module has current limit protection:32A (220Vac input); 14A (160Vac input); 12A (110Vac input)
Short circuit protection	The module has short circuit protection. The module output 32A (220Vac input) or 14A (160Vac input) or 12A (110Vac input) upon shortcircuit. The module will recover when the fault is removed
OVT protection	The module will send alarm and shutdown when the testing temperature is above 98 °C; and recovery when the temperature is under 73 °C

**Alarm**

The module will send alarm through alarm indicators upon input over- and under- voltage, output over-voltage, and module fault.

**Input And Output Connectors**

EPW50-27A-E power module connects to user system through its interfaces: AC input socket (FCI, 51939-021); DC output socket (FCI, 51939-022), which also serves as the signal interface. Their pin locations are shown in Figure 1 and pin definitions are listed in Table 1.

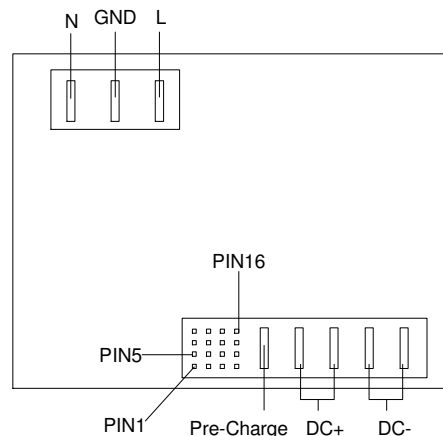


Figure 1 Pin location

Table 1 Pin definition

Pin	Definition	Function	Contact Sequence
AC input (FCI 51939-021)			
See Fig.1	L	Live line	2
See Fig.1	GND	Protect earth	1
See Fig.1	N	Neutral line	2
DC OUTPUT (FCI 51939-022)			
1	ADDRESS0	Address	3
2	ADDRESS1	Address	3
3	LOADSHARE+	Share bus	3
4	NC	Not connected	4(reserved)
5	NC	Not connected	3(reserved)
6	NC	Not connected	3(reserved)
7	ADDRESS2	Address	3
8	ADDRESS3	Address	3
9	LOADSHARE-	Address	3
10	+5V	RS485 power +	3
11	+5V GND	RS485 power -	3
12	RS485-	RS485 -	3
13	ADDRESS4	Address	3
14	NC	NC	3
15	RS485+	RS485 +	3
16	ADDR_GND	Address GND	3
See Fig.1	Pre-Charge	Precharge	1
See Fig.1	DC+	Output 27V+	2
See Fig.1	DC+	Output 27V+	2
See Fig.1	DC-	Output 27V-	2
See Fig.1	DC-	Output 27V-	1

Explanations:

- LOADShare+ and LOADShare- are load-sharing signal cables when multiple modules work in parallel. They should be well grounded and shorter than 0.5m.
- Pre-Charge is the signal cable protecting pins upon online removal/insertion.
- PE is the module terminal connecting ground. Use yellow-green bicolor cable with sectional area of 4mm<sup>2</sup> or more. Connect it to the ground reliably.
- L and N are the live line and neutral line of AC input.
- Address explanation: the module internal pull-up address. ADDRESS0 ~ 4 can be suspended or connect to GND outside module. Suspending presents "0", and short to GND presents "1". For example, ADDRESS0 is shorted with GND outside the module, other addresses are suspending; then the module address is 1. The address range of the module is within 0 ~ 31.

**Installation And Operation**

The installation dimensions refer to Figure 2. Install the module using the following procedures:

- Make sure the handle of the module is open.
- Put the module into the corresponding slot.
- Push the module until the module interfaces contact the interfaces on the backboard.
- Push the handle until the module is completely inserted into the subrack. At this point, the handle tilts up slightly locking the module into the subrack.

- Fix the screws on the handle using a screwdriver to finish the module installation.

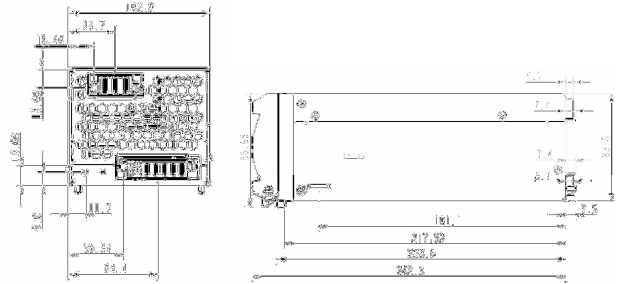


Figure 2 Installation dimensions (mm)

Where a single module cannot meet the load demand, multiple modules can be connected in parallel to share the load. In this case, just connect all the output connectors and load sharing cables of the modules respectively in parallel.

**Maintenance**

The module is hotswappable. The damaged module can be replaced during the system operation. Locate the module pins in the backboard socket when replacing the module. Check whether the pins are bent or skew when the module can not be inserted into the socket properly.

Replacing the module: the module has a lock structure matching the external chassis to lock the module in place. When taking out the module, just pull up the handle on the bottom of the module front panel and pull it out. When installing the module, insert the module along the slot smoothly until the lock structure locks the module. The whole unit should be replaced if maintenance is needed.

**Troubleshooting**

You may contact the nearest Emerson local sales office or service center if the unit is faulty. Do not manage by yourself. Please return the faulty unit to Emerson directly for repair. Table 2 is troubleshooting of simple problems.

Table 2 Troubleshooting

Indicator	Normal	Abnormal	Reason for abnormal	Actions
Green LED	On	Off	No AC input, or input fuse damaged, or module failure, or all protections	Check loads, input voltage, input fuse, and the fan of the module; Remove the conditions raising protections
Red LED	Off	On	Module shutdown fault	
Yellow LED	Off	On	Module temperature pre-alarm	

**Note**

- Specifications are subject to change without notice.
- Warranty period: 1 year.