

# ACK

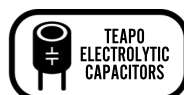
SERIES

## 80 PLUS BRONZE



### Features:

- Teapo Electrolytic Capacitors: Stable power delivery and proven reliability
- Embossed Cables: Durable, flexible, and easy to route
- 140mm Hydraulic Bearing Fan: Quiet, efficient, and built for longevity
- Comprehensive Protection: OVP, OPP, SCP, OCP, UVP, and OTP safeguards
- 5-Year Warranty: Consistent performance backed by trusted support



# SPECIFICATIONS

MODEL	HA-650AA2
POWER OUTPUT	650 W
INPUT VOLTAGE	200 - 240 VAC
INPUT FREQUENCY	50 - 60 Hz
MAX CURRENT	4.5 A
EFFICIENCY	89.41% at typical load
DIMENSIONS (L x W x H)	145 x 150 x 86 mm
MODULAR	Non-Modular
CERTIFICATIONS	80 PLUS Bronze, Cybenetics Bronze, and PPLP Bronze
WARRANTY	5 years
PFC	Active PFC
FAN SIZE	140 mm hydraulic bearing
PROTECTIONS	OVP, OPP, SCP, OCP, UVP, OTP
OPERATION TEMPERATURE	0 ~ 40°C
CIRCUIT STRUCTURE	Double forward topology

DC OUTPUT	MAX LOAD (A)	MAX OUTPUT (W)
+3.3V	15 A	100 W
+5 V	15 A	
+12 V	54 A	648 W
+5VSB	3 A	15 W
-12V	0.3 A	3.6 W

# SPECIFICATIONS

MODEL	HA-750AA2
POWER OUTPUT	750 W
INPUT VOLTAGE	200 - 240 VAC
INPUT FREQUENCY	50 - 60 Hz
MAX CURRENT	5.5 A
EFFICIENCY	89.61% at typical load
DIMENSIONS (L x W x H)	145 x 150 x 86 mm
MODULAR	Non-Modular
CERTIFICATIONS	80 PLUS Bronze, Cybenetics Bronze, and PPLP Bronze
WARRANTY	5 years
PFC	Active PFC
FAN SIZE	140 mm hydraulic bearing
PROTECTIONS	OVP, OPP, SCP, OCP, UVP, OTP
OPERATION TEMPERATURE	0 ~ 40°C
CIRCUIT STRUCTURE	Double forward topology

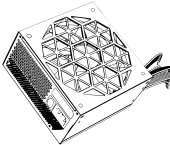
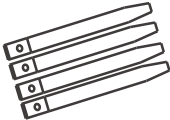
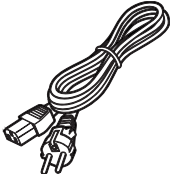



DC OUTPUT	MAX LOAD (A)	MAX OUTPUT (W)
+3.3V	15 A	100 W
+5 V	15 A	
+12 V	62.5 A	750 W
+5VSB	3 A	15 W
-12V	0.3 A	3.6 W

# SPECIFICATIONS

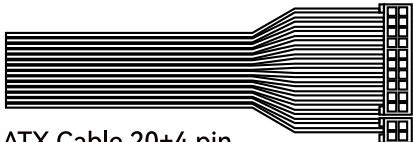

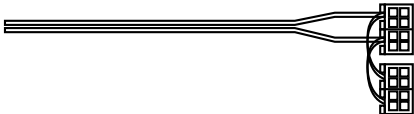


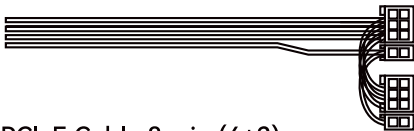

MODEL	HA-850AA2
POWER OUTPUT	850 W
INPUT VOLTAGE	200 - 240 VAC
INPUT FREQUENCY	50 - 60 Hz
MAX CURRENT	6 A
EFFICIENCY	90.20% at typical load
DIMENSIONS (L x W x H)	145 x 150 x 86 mm
MODULAR	Non-Modular
CERTIFICATIONS	80 PLUS Bronze, Cybenetics Bronze, and PPLP Bronze
WARRANTY	5 years
PFC	Active PFC
FAN SIZE	140 mm hydraulic bearing
PROTECTIONS	OVP, OPP, SCP, OCP, UVP, OTP
OPERATION TEMPERATURE	0 ~ 40°C
CIRCUIT STRUCTURE	Double forward topology

DC OUTPUT	MAX LOAD (A)	MAX OUTPUT (W)
+3.3V	15 A	100 W
+5 V	15 A	
+12 V	70.8 A	850 W
+5VSB	3 A	15 W
-12V	0.3 A	3.6 W

# PACKAGE CONTENTS

Item	Name	Quantity
	Power Supply Unit	1
	Vecro Strap	4
	Power Cord	1
	Power Supply Screw	4
	Zip Tie	10
	User Manual	1

# CABLE INFORMATION

Cable	650W	750W	850W	Length (±10 mm)
 <p>ATX Cable 20+4 pin</p>	1	1	1	570 mm
 <p>ATX 12V Cable 8-pin (4+4)</p>	0	2	2	620 mm
 <p>ATX 12V Cable 8-pin (4+4)</p>	1	0	0	630 + 120 mm
 <p>12V - 2 x 6 Cable (12 + 4)</p>	0	1	1	650 mm
 <p>PCI-E Cable 8-pin (6+2)</p>	0	1	1	580 mm
 <p>PCI-E Cable 8-pin (6+2)</p>	1	1	1	585 + 120 mm
 <p>SATA and MOLEX / IDE</p>	2	2	2	470 + 150 + 150 mm

# SAFETY AND PROTECTION

Your new power supply unit comes equipped with multiple protective features to ensure safe and reliable operation:

**Under-Voltage Protection (UVP)** shuts the PSU off if the voltage the PSU is providing to the PC drops below accepted values.

**Over-Voltage Protection (OVP)** Monitors 12V, 5V, and 3.3V outputs. Automatically shuts down the PSU if voltage exceeds safe levels.

**Over-Power Protection (OPP)** Turns off the PSU if power draw reaches preset percentage of the rated capacity.

**Short-Circuit Protection (SCP)** Activates when output impedance falls below 0.1 ohms. Protects against shorts between rails or to ground, preventing damage to the PSU and system components.

**Over-Current Protection (OCP)** Keeps 3.3V, 5V, and 12V rail outputs within safe operating limits.

**Over-Temperature Protection (OTP)** Shuts down the PSU if internal temperature becomes too high, typically due to overloading or fan failure.

These safety mechanisms work together to protect your computer system and the power supply itself from potential electrical hazards. For optimal performance and longevity, always operate your PSU within its rated specifications



# INSTALLATION GUIDE

**Before you begin, ensure your system is powered off and unplugged from any power source.**

## **Step 1: Removing the Existing PSU (Skip if building a new system)**

1. Unplug the AC power cord from both the wall outlet and the current PSU.
2. Carefully disconnect all power cables from your components (GPU, motherboard, drives, etc.).
3. Remove the old PSU from your case following your chassis manual instructions.

## **Step 2: Installing Your New PSU**

1. Verify the PSU's AC power cable is disconnected.
2. Mount the new PSU in your case using the provided screws.
3. Connect the main power cables:
  - Attach the 24-pin ATX cable to your motherboard.
  - Connect the CPU power cable (4-pin, 8-pin, or 4+4-pin) as required by your motherboard.
4. Connect component power cables:
  - SATA power cables to SSDs, HDDs, and optical drives.
  - PCIe or 12V-2x6 cables to your graphics card(s) if needed.
  - Peripheral (Molex) cables to any components requiring them.
5. Double-check all connections are secure.
6. Organize cables for optimal airflow, using cable management features in your case.
7. Connect the AC power cord to the PSU, but don't plug it into the wall yet.

### **Important Notes:**

Refer to your motherboard and GPU manuals for specific power requirements.

**After installation, ensure all components are properly connected before powering on your system.**

