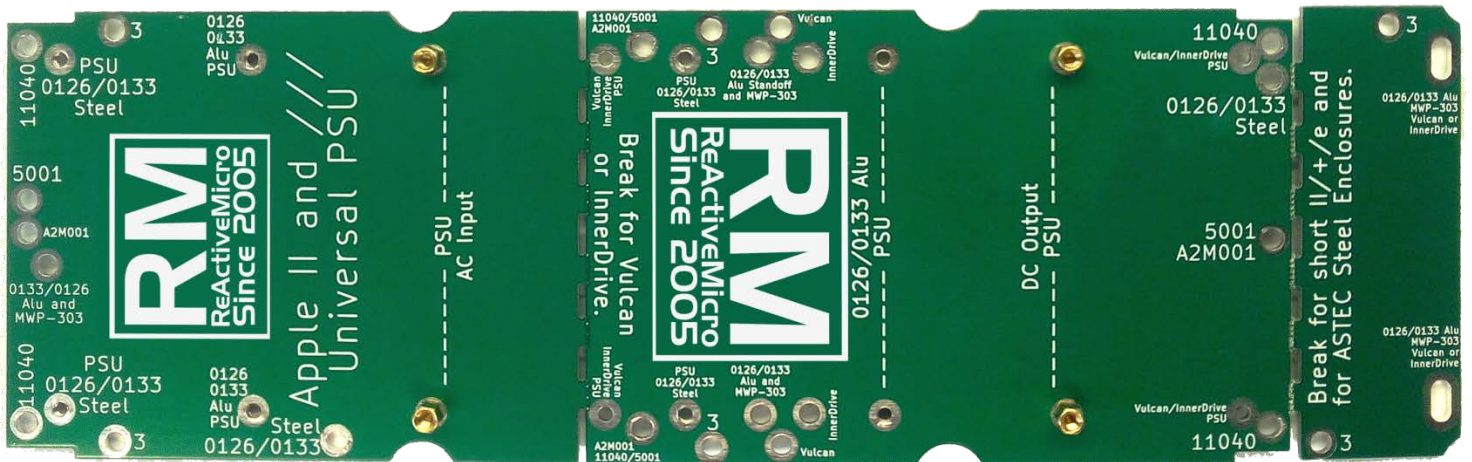




Apple II

Universal PSU Kit v1.0 Installation Guide



Brought To You By And Designed By:



Features Of The Universal PSU Kit:

- Fits all standard Apple II and /// Power Supply Enclosures. (all parts included, user supplies household tools)
- Meets or surpasses all Apple II and /// power requirements.
- Modern PSU design.
- Standard 2 year warranty.
- Universal PSU operates on a wide range of input power: 90-264VAC, 47-63Hz.
- On-board Power LED shows when AC is applied to the Universal PSU and is working.
- Constant Voltage design (regulated, no low voltages - 5% tolerance, 7% at no load)
- Fast Power Reset: No more “hung” systems or need for long off periods and waiting before turning back on.
- Interchangeable DC Output Cable for II/+e/gs/III. One PSU can support all!
- Runs cool/low heat output: Operates 50% cooler than the old Apple II PSU.
- Cleaner and more consistent power than the old Apple II PSU.
- More efficient than old Apple PSU: Consumes 1.6A at 100v, 1A at 230v, 63W max at full output: +5v 6A, +12v 3A.
- Fused AC Over Current/Over Voltage/Surge protection.
- DC Over-Voltage protection (active crowbar design), and Auto Restart.
- Fully UL/CE Certified and Tested design.
- All units fully stress-tested/burned-in at 90% loading before shipping.
- Kit is “reversible”. You can downgrade your Enclosure back to its original state if desired in the future.

NOTE: If you plan to reverse, it would be best to desolder where we mention “cut”.

The Universal PSU Kit includes the following items:

For the /// Kit parts list please see Page 46, Vulcan Add-on Kit parts list please see Page 39.



Universal PSU



Universal PCB



2x Male Pin & Housing



2x ScotchLok Crimp Splice



20 AWG Yellow Connector



5x Phillips Screw, M3



5-pos Strain Relief Cap



8-pos Strain Relief Cap



Female Standoff

Tools Required: Philips Screwdriver, Small Slotted Screwdriver, Slip-Joint Pliers.

Optional Tools: Wire Cutters/Strippers, Multimeter.

The Universal PSU Kit installation instructions for each enclosure type are indexed below.

****Please, fully read the installation instructions for your particular enclosure before you begin.****

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BEFORE YOU BEGIN BE SURE TO REMOVE THE POWER SUPPLY FROM YOUR APPLE AND DISCONNECT FROM AC.

II/+e: Remove the mounting screws from the bottom of the case.

IIgs: With the case open, hold open the clip in the front of your IIgs.

///: Remove the mounting screws along the edges to remove the PSU Pan.

→ **Support and the most current documentation can be found at the ReActiveMicro.com Wiki** ←

www.ReActiveMicro.com/wiki

Note: See your Apple II Power Supply Enclosure for the model number,
usually found opposite end of the AC connector.

Review and familiarize yourself with the included hardware. Please contact Support if you find any discrepancies.
“PSU” stands for Power Supply Unit (your Apple II Power Supply for example).

IMPORTANT NOTES: The Universal PSU design has an adjustable Output Voltage Potentiometer. It comes preset from the factory and locked in place with security adhesive. We HIGHLY RECOMMEND not adjusting it under any circumstances as it could cause damage to your Apple II and void your Universal PSU warranty. Only those with knowledge or need should ever adjust. **You have been warned.**

Once the Enclosure has been upgraded to the Universal PSU it MUST be fully mounted in the computer case in order for Ground to be connected to Common on the DC Output. This connection is achieved by the Enclosure mounting screws or case clips.

606-5001:

1. To open your Apple II Power Supply Enclosure start by removing the 8 small screws (4 on each side) on the bottom edge of each long side. The bottom panel of the enclosure can then be removed. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.



2. You will find the old PSU PCB mounted to the top of the enclosure with 4 screws in a diamond-shape pattern. Remove these 4 screws. The old PSU PCB should now be loose, however the AC and DC wires are securing it to the case.



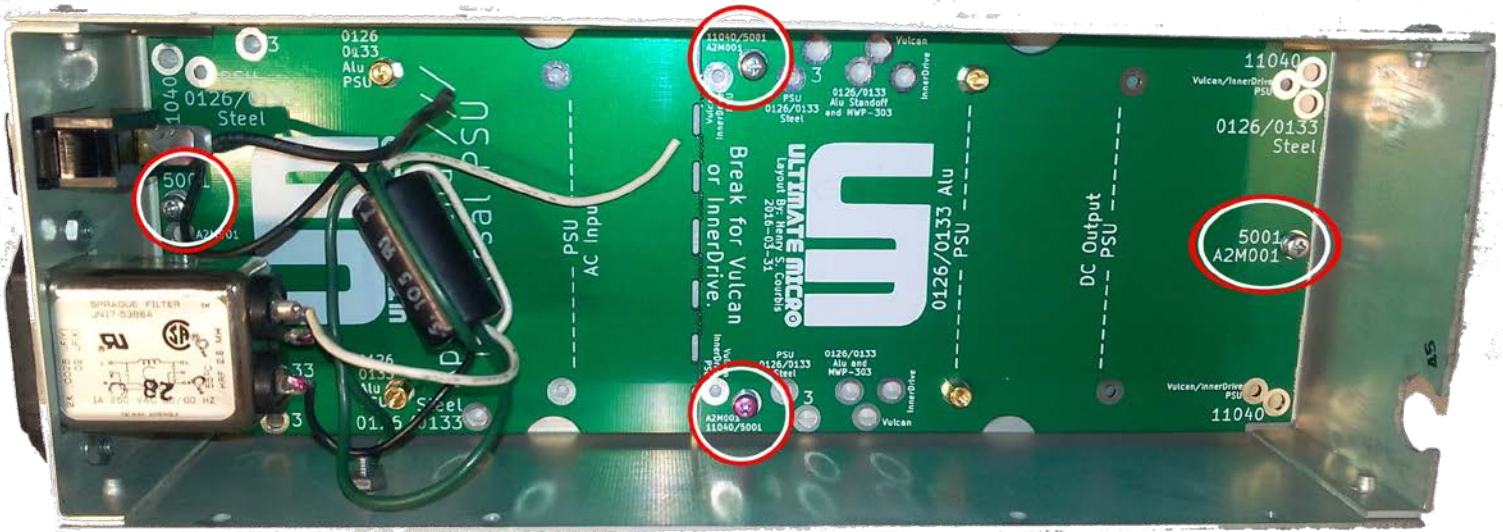
3. Next, remove the 2 AC wires from the old PSU PCB. Some PCBs may have removable Pin style connectors. Most however have soldered wires that need to be cut from the old PCB. If the wires look like they just end at the old PSU PCB and can't be removed when gently pulled, then they should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure.

4. Removal of the old PSU PCB.

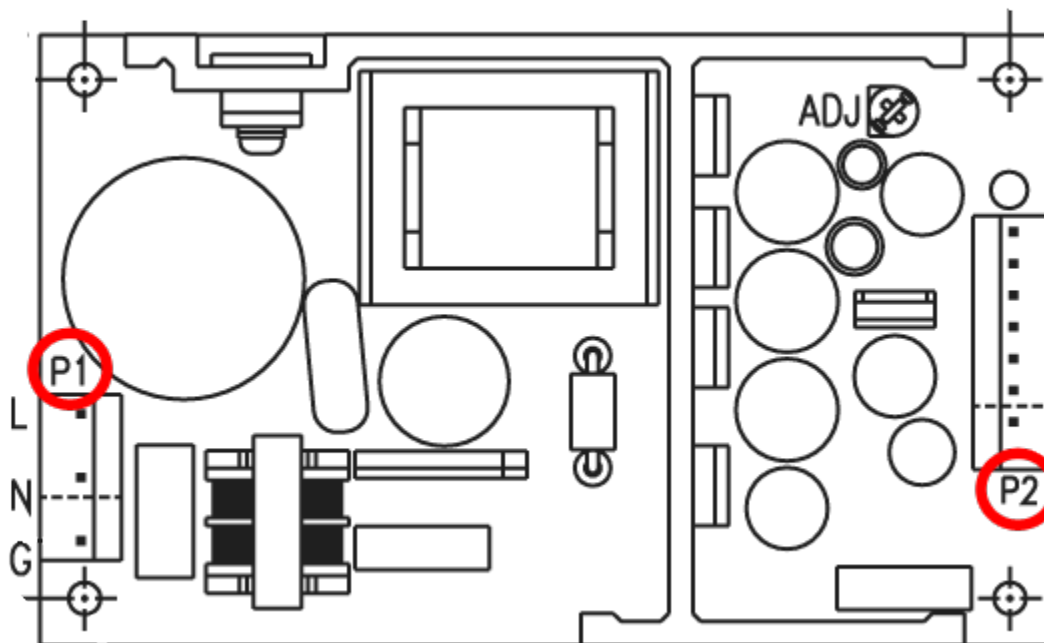
- a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
- b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.

5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.

- a. For this enclosure be sure to break off the small end of the Universal PCB as noted on it. Lay the Universal PCB on the edge of a counter or desk and while securely holding the main part of the PCB apply pressure to the small end to be broken off. It is surprisingly strong, however it will break cleanly.
- b. The mounting points on the Universal PCB are clearly marked for this enclosure. Be sure to reuse all mounting screws.

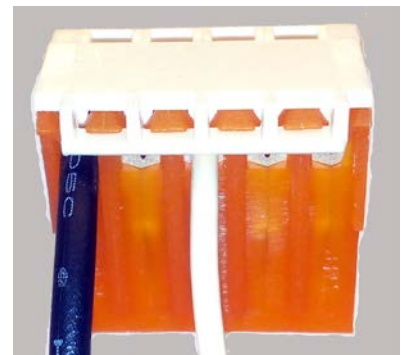
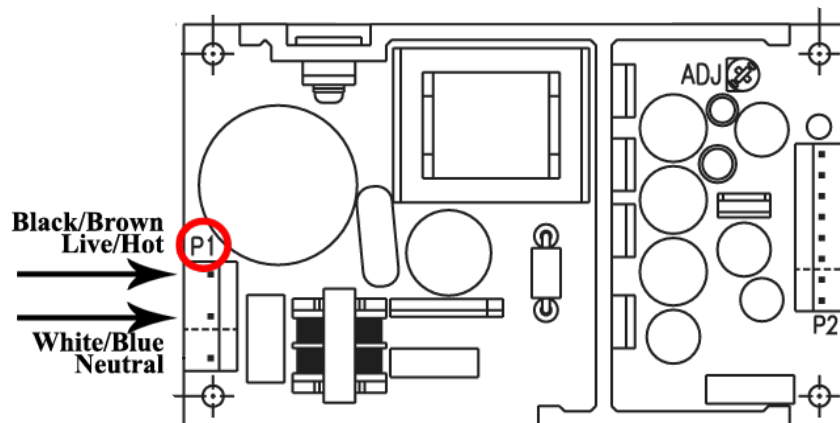


6. Next, mount the new Universal PSU to the brass standoffs pre-installed on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.



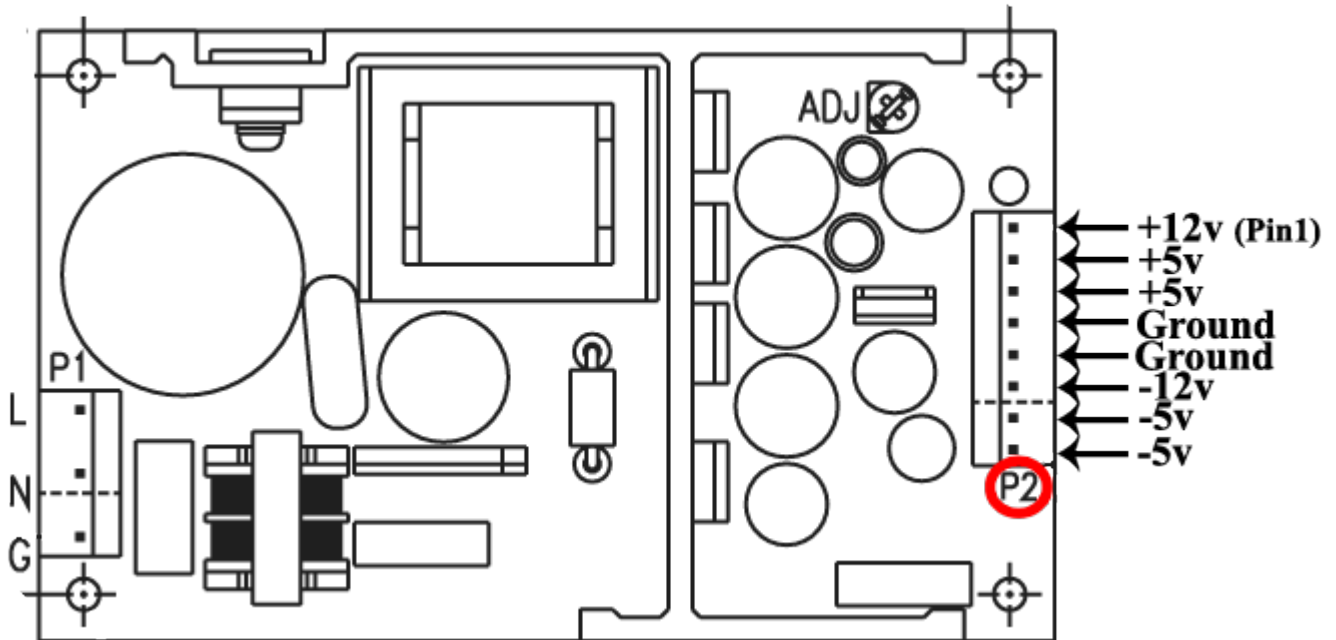
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
- b. If your old enclosure has removable Pin style connectors, then use the Male Pin Connectors to make the connection. Wire the Male Pin Connector tails to connect to the MTA156, 5 Position connector already connected to the Universal PSU.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below).
Note: Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



- c. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 1. Pin 1 (+12v): Yellow (sometimes White with Orange Stripe)
 2. Pin 2 or 3 (+5v): Orange
 3. Pin 4 (Ground): Black
 4. Pin 5 (Ground): Black
 5. Pin 6 (-12v): Green (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- d. Install the Strain Relief Cap onto the top of the MTA156 connector.

9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as electrical shock can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.

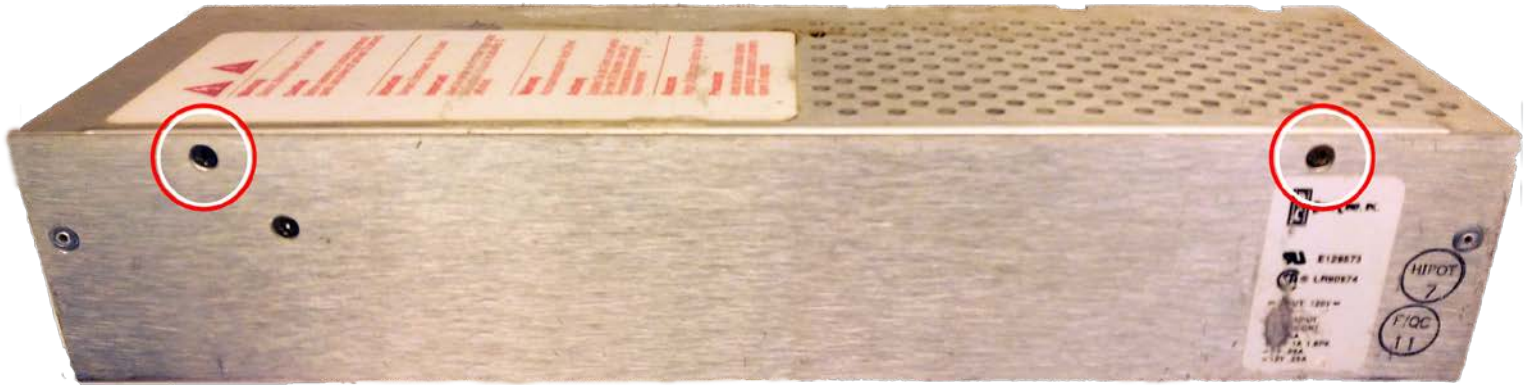
- a. Replace the enclosure screws removed in Step 1.
- b. Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.

11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

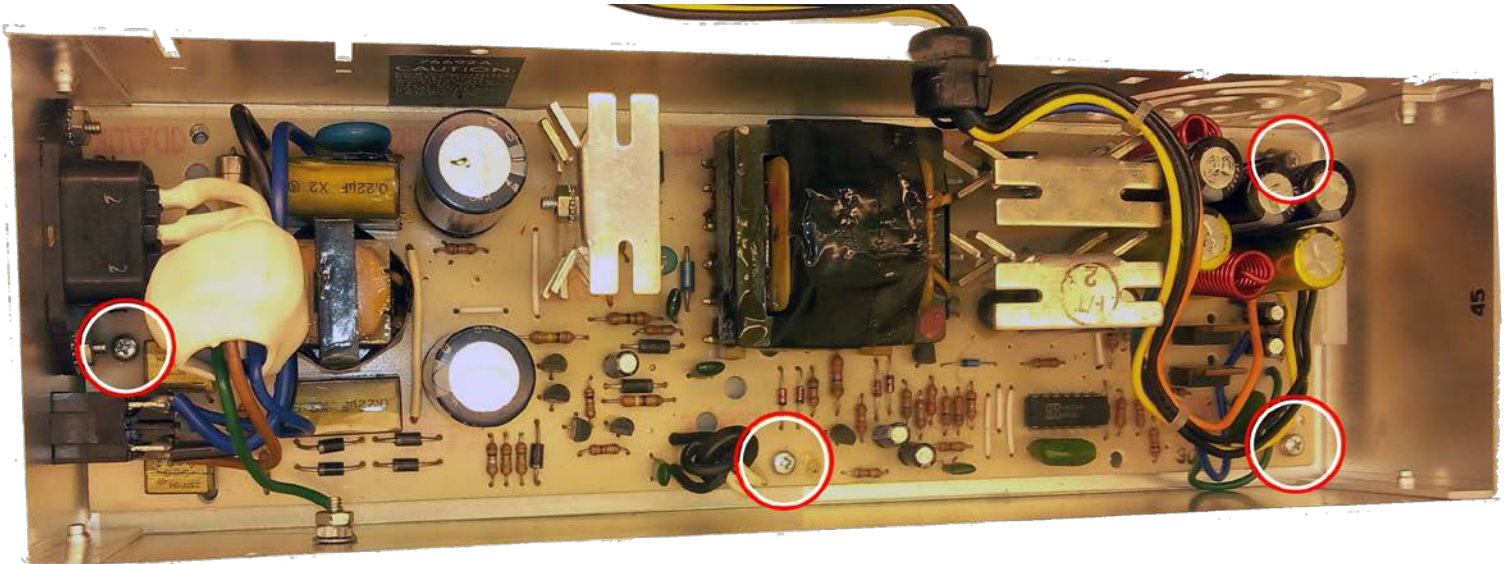
699-0133 – Aluminum and

699-0126 – Aluminum:

1. To open your Apple II Power Supply Enclosure start by removing the 4 small screws, 2 each on the top edge of each long side. The top panel of the enclosure can then be removed. It's easiest to pry the top open near the fan cutout. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.

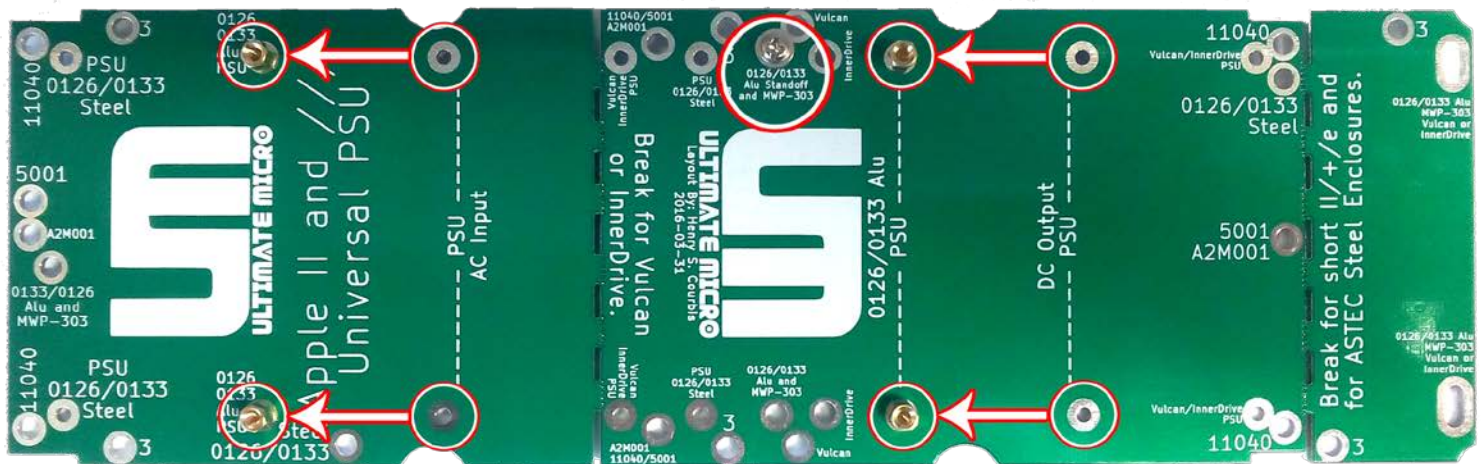


2. You will find the old PSU PCB mounted to the enclosure with 4 screws. Remove these screws. The old PSU PCB should now be loose, however the AC and DC wires are securing it to the case.



3. Next, remove the 2 AC wires from the old PSU PCB. They should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure.
4. Removal of the old PSU PCB.
 - a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
 - b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.

5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.
 - a. If your Enclosure's lid has a metal flange (all 0126 models) riveted near the AC side then skip this step. All others: Move the Brass Standoffs from their pre-installed locations to the ones marked "0126/0133 Alu PSU". Use pliers or a 3/16" Nut Driver to unscrew the Brass Standoffs. Install an M3 screw into the Brass Standoff and use a Phillips Screwdriver to reinstall the Standoff to the Universal PCB.
 - b. Next install the 6mm, F-F, M3, Hex Standoff to the bottom of the board in the location marked "0126/0133 Alu Standoff and MWP-303" with one of the M3 Phillips Screws.

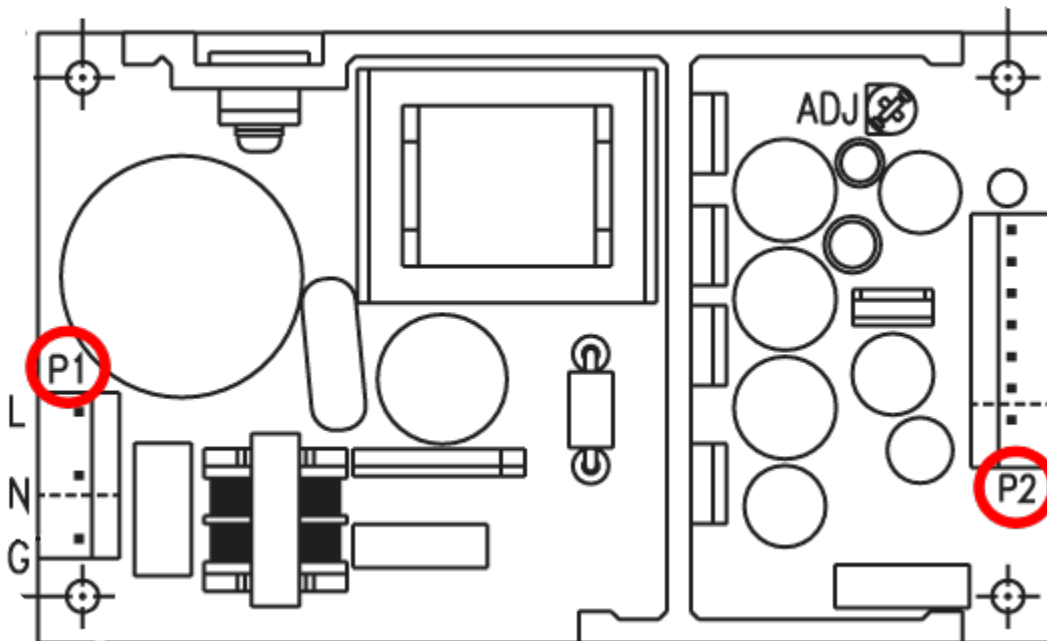


- c. The mounting points on the Universal PCB are clearly marked for this enclosure. Be sure to reuse all mounting screws.



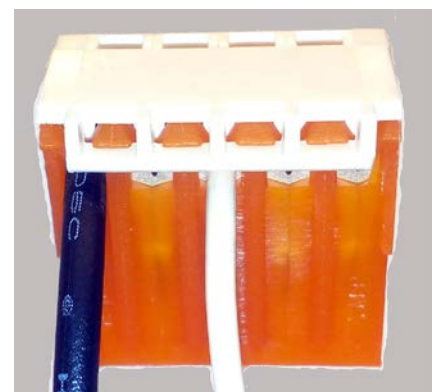
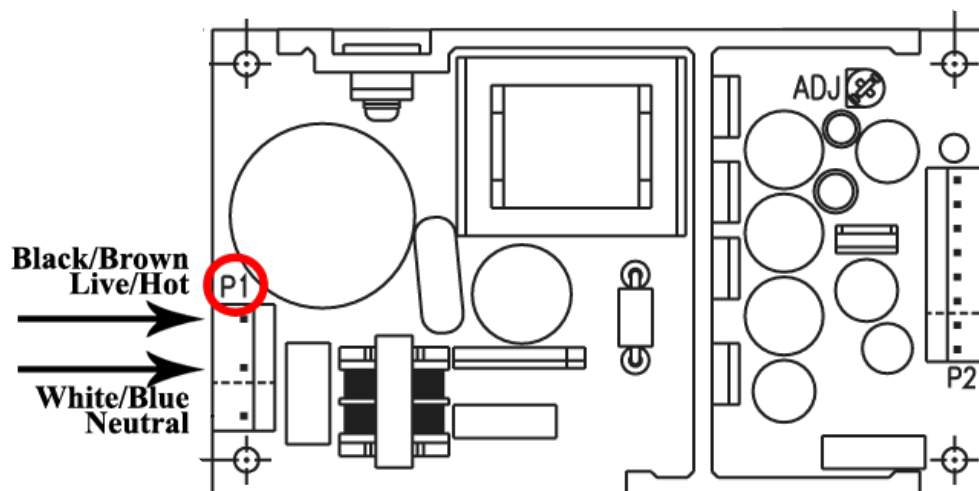
6. Next, mount the new Universal PSU to the brass standoffs on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.

Note: If your lid has a “flange” on it and you didn’t move the mounting Standoffs then the Heatsink on the PSU will be very close or even touching the DC Output Cable. This is ok and unavoidable. Your only other option is to drill out the rivets and remove the flange. However this may affect mounting in a IIgs.



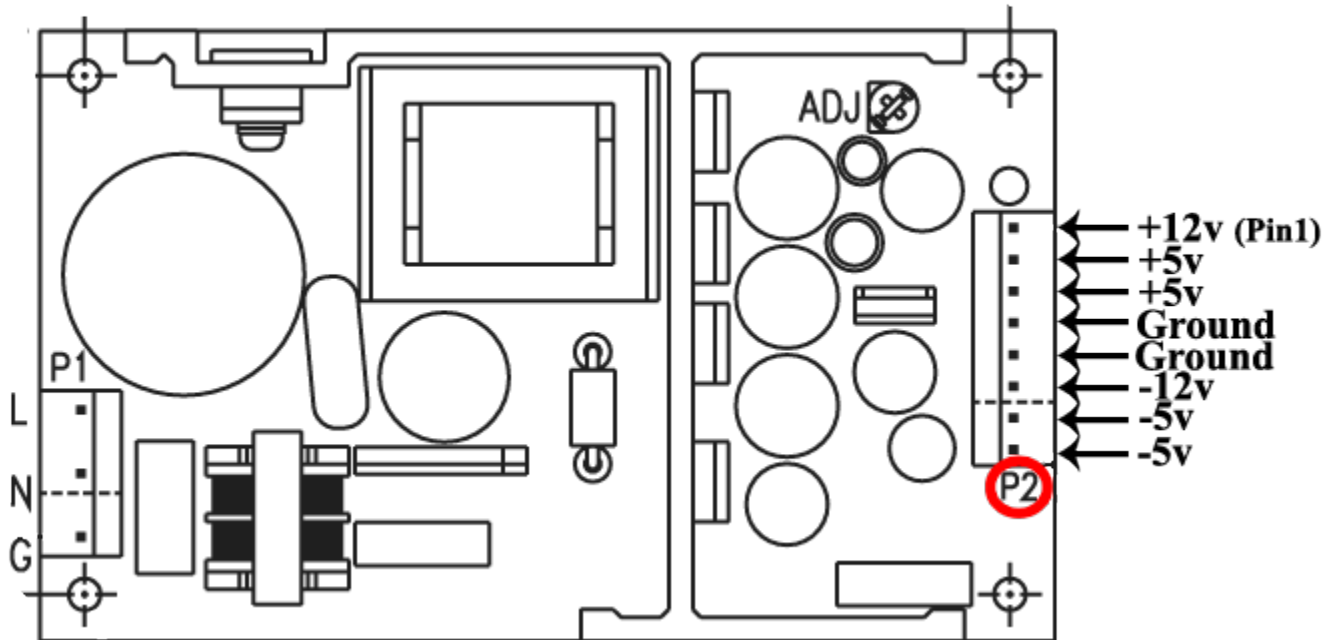
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below). **Note:** Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



- c. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 1. Pin 1 (+12v): Yellow (sometimes White with Orange Stripe)
 2. Pin 2 or 3 (+5v): Orange
 3. Pin 4 (Ground): Black
 4. Pin 5 (Ground): Black
 5. Pin 6 (-12v): Green (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- d. Install the Strain Relief Cap onto the top of the MTA156 connector.

9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

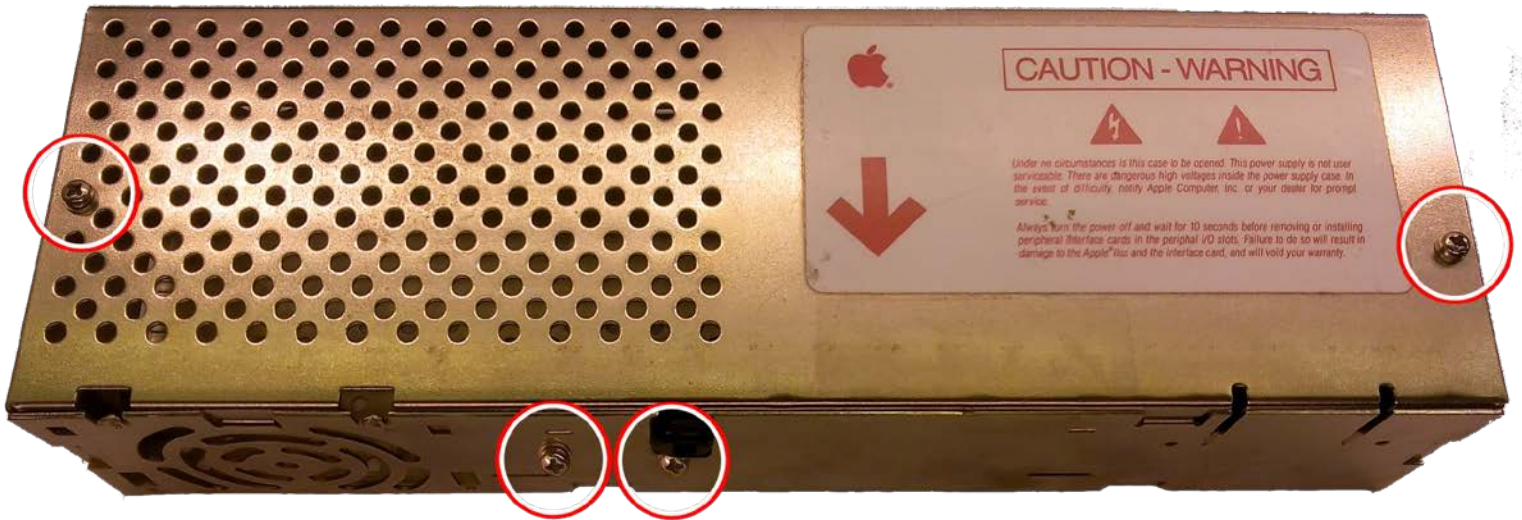
CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.
- Replace the enclosure screws removed in Step 1.
 - Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.
11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

699-0133 – Steel and

699-0126 – Steel:

1. To open your Apple II Power Supply Enclosure start by removing the 2 screws on the top edge, and the 2 screws close together just below the black plastic grommet of the DC Output Cable. The top panel of the enclosure can then be removed. It's easiest to pry the top open near the fan cutout, however you may need to find additional pry points as this enclosure tends to be a bit tricky to open. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.

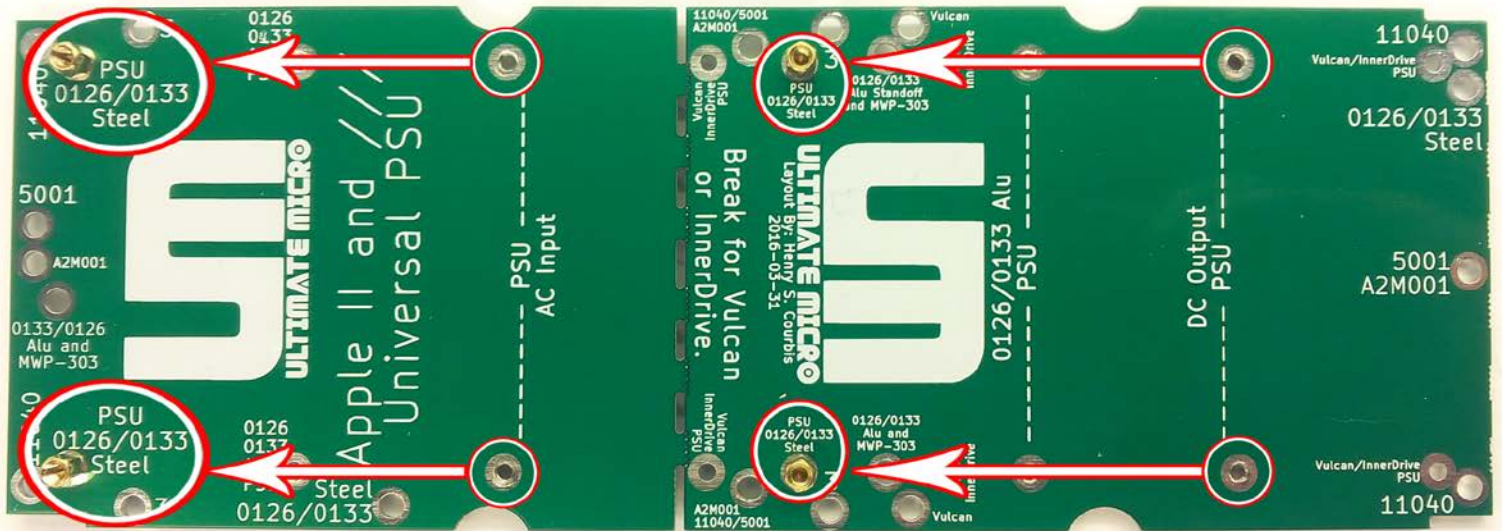


2. You will find the old PSU PCB mounted to the enclosure with 2 screws. Remove these screws. The old PSU PCB should now be loose, however the AC and DC wires are securing it to the case.

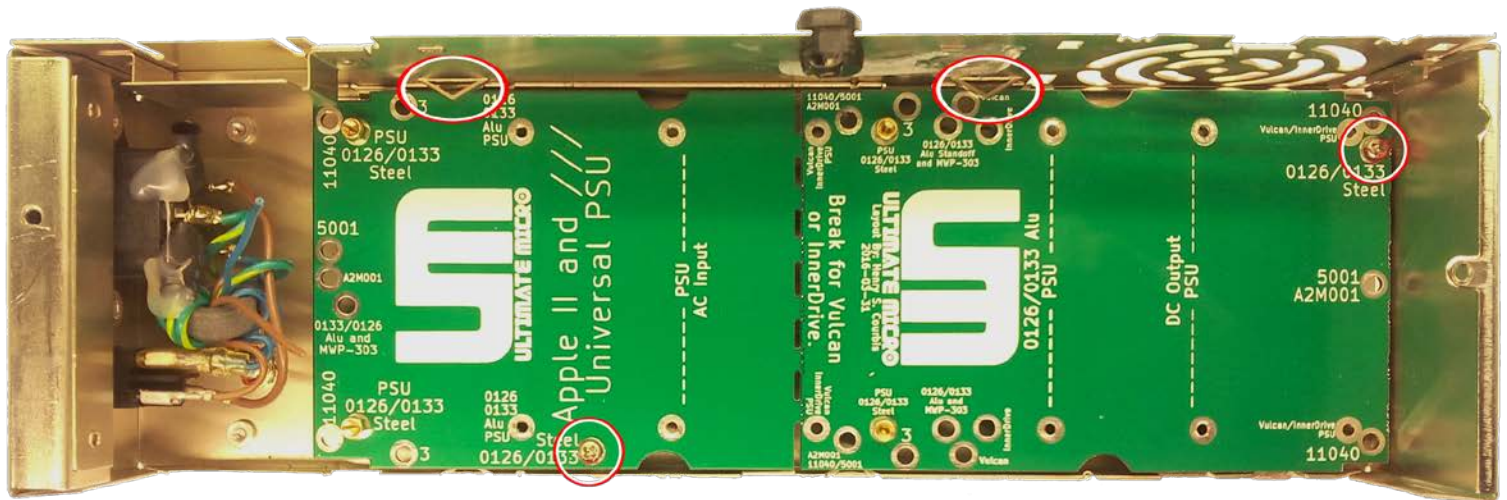


3. Next, remove the 2 AC wires from the old PSU PCB. They should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure.
4. Removal of the old PSU PCB.
 - a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
 - b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.

5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.
 - a. For this enclosure be sure to break off the small end of the Universal PCB as noted on it. Lay the Universal PCB on the edge of a counter or desk and while securely holding the main part of the PCB apply pressure to the small end to be broken off. It is surprisingly strong, however it will break cleanly.
 - b. Also be sure to move the Brass Standoffs from their pre-installed locations to the ones marked "0126/0133 Steel PSU".

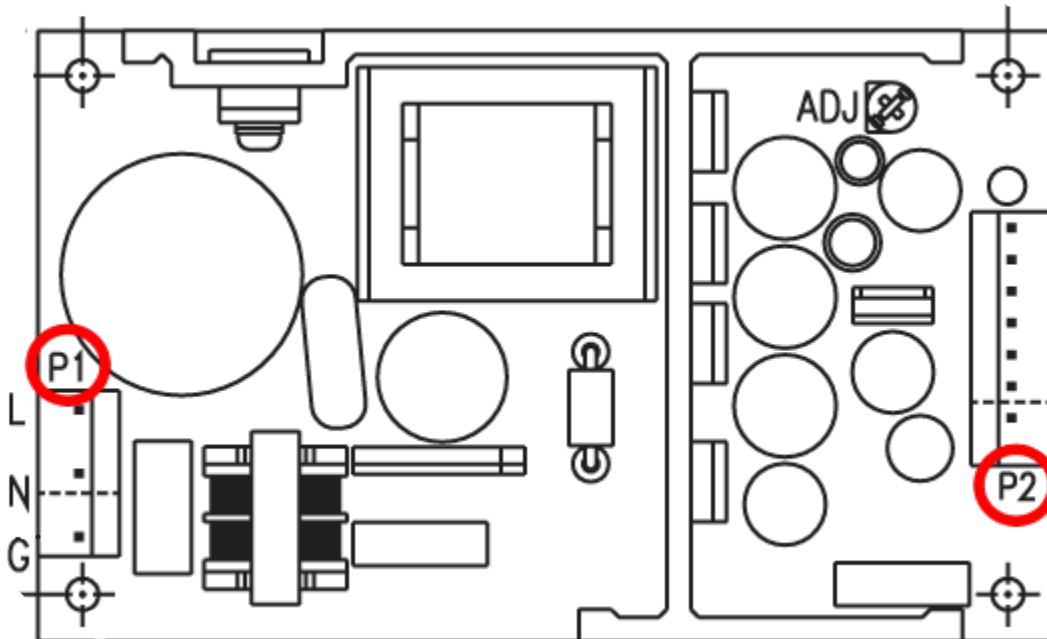


- c. The mounting points on the Universal PCB are clearly marked for this enclosure. Be sure to reuse all mounting screws. Also be sure the Universal PCB is correctly inserted in between the metal supports along the back edge.



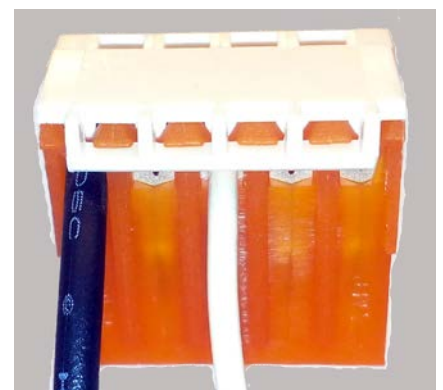
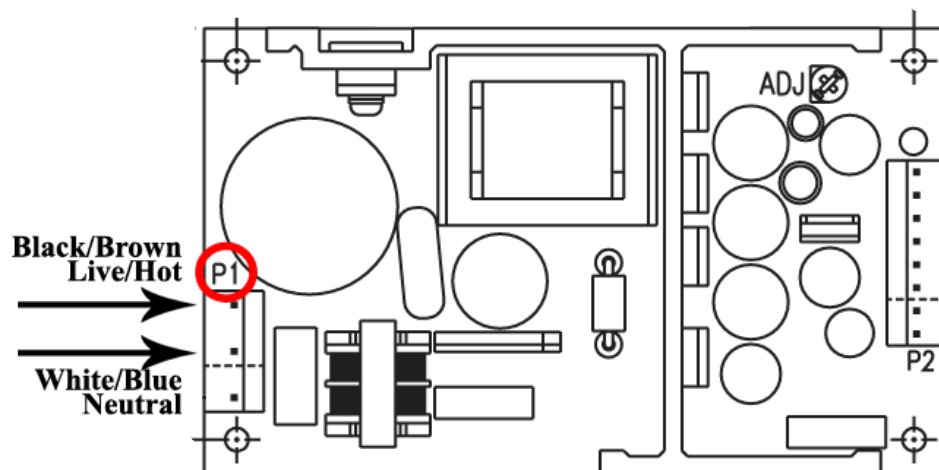
6. Next, mount the new Universal PSU to the brass standoffs on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.

Note: The Heatsink on the PSU will be very close or even touching the DC Output Cable. This is ok and unavoidable.



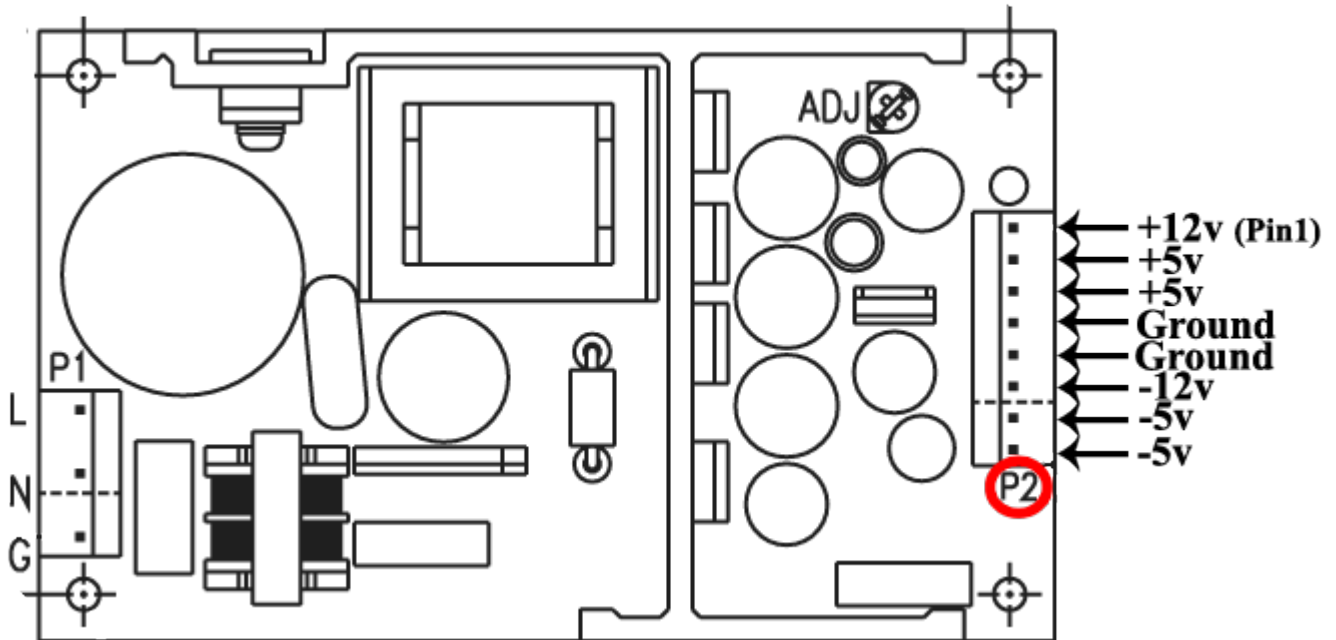
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below). **Note:** Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



- c. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
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 5. Pin 6 (-12v): Green (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- d. Install the Strain Relief Cap onto the top of the MTA156 connector.

9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.
- Replace the enclosure screws removed in Step 1.
 - Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.
11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

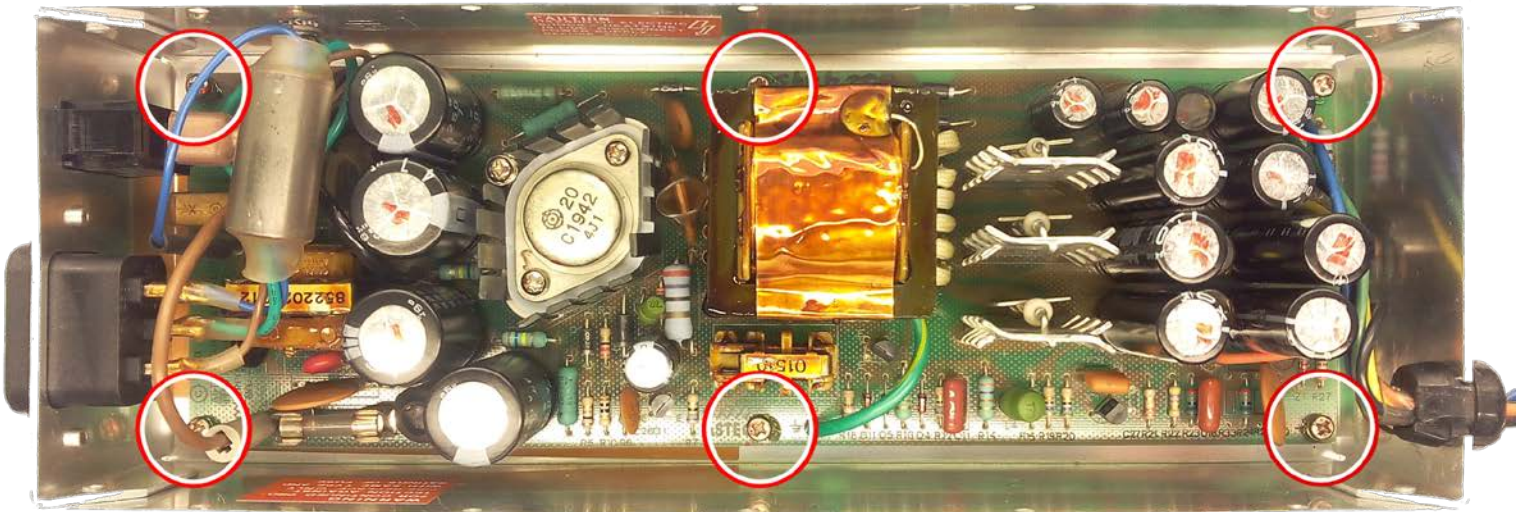
AA11040/B/C:

1. To open your Apple II Power Supply Enclosure start by removing the 10 small screws (5 on each side) on the bottom edge of each long side. The bottom panel of the enclosure can then be removed. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.

Note: Some early Enclosures will have 2 rivets that will need to be drilled and removed.

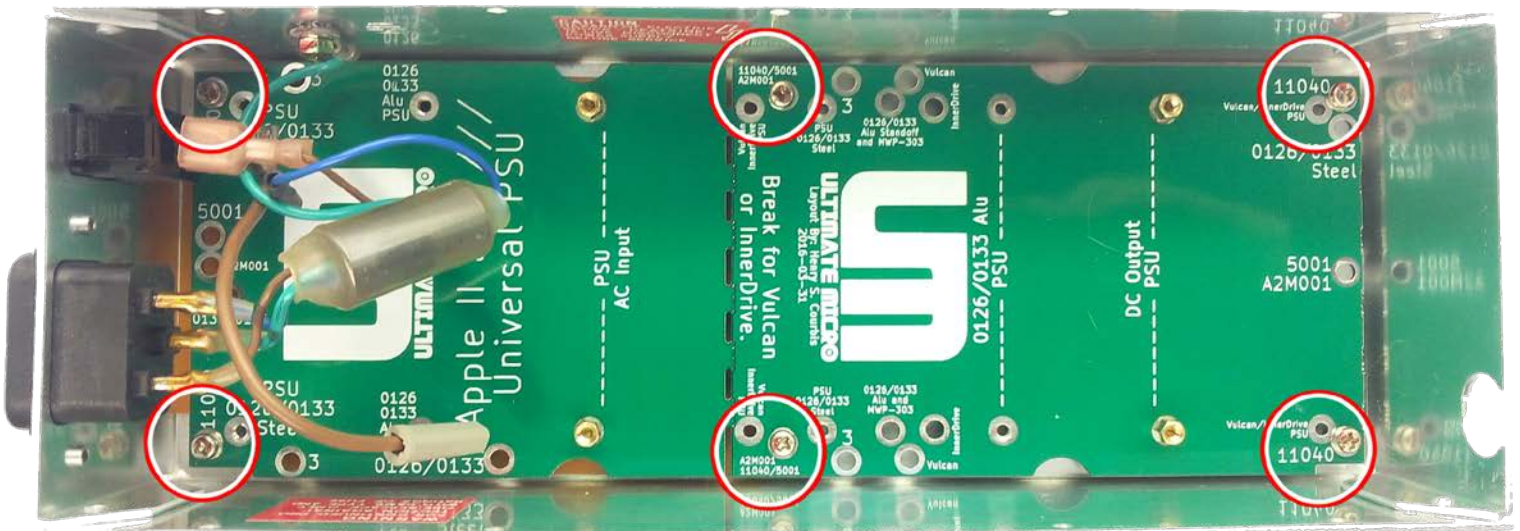


2. You will find the old PSU PCB mounted to the top of the enclosure with 6 screws. Remove these 6 screws. Be sure to remove any lock washers as well, so they don't end up loose in the enclosure. The old PSU PCB should now be loose, however the AC and DC wires are securing it to the case.

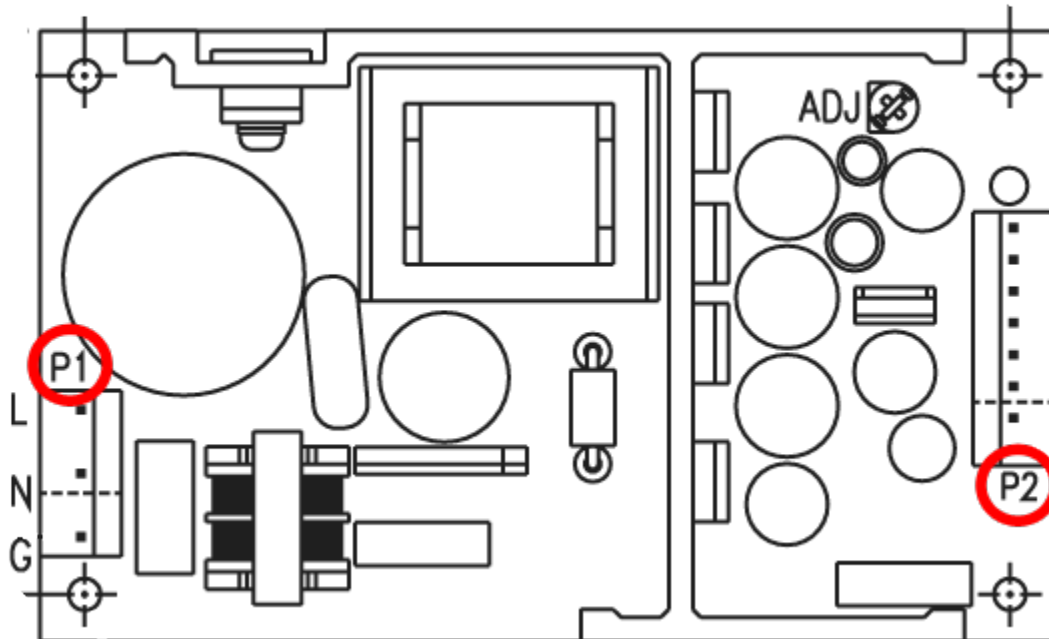


3. Next, remove the 2 AC wires from the old PSU PCB. Some PCBs may have removable Pin style connectors. Most however have soldered wires that need to be cut from the old PCB. If the wires look like they just end at the old PSU PCB and can't be removed when gently pulled, then they should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure. Leave the green ground wire connected to the enclosure.

4. Removal of the old PSU PCB.
 - a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
 - b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.
5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.
 - a. For this Enclosure be sure to break off the small end of the Universal PCB as noted on it. Lay the Universal PCB on the edge of a counter or desk and while securely holding the main part of the PCB apply pressure to the small end to be broken off. It is surprisingly strong, however it will break cleanly.
 - b. The mounting points on the Universal PCB are clearly marked for this Enclosure. Be sure to reuse all mounting screws and lock washers.

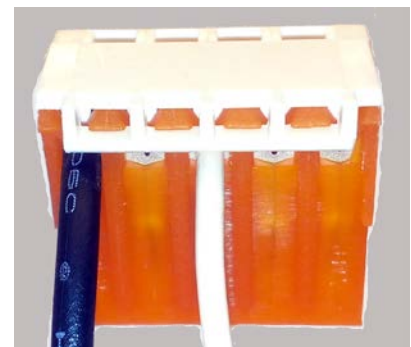
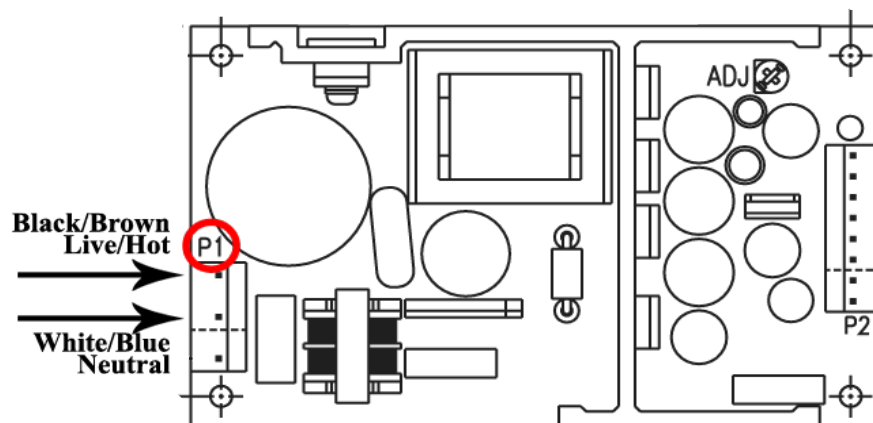


6. Next, mount the new Universal PSU to the brass standoffs pre-installed on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.



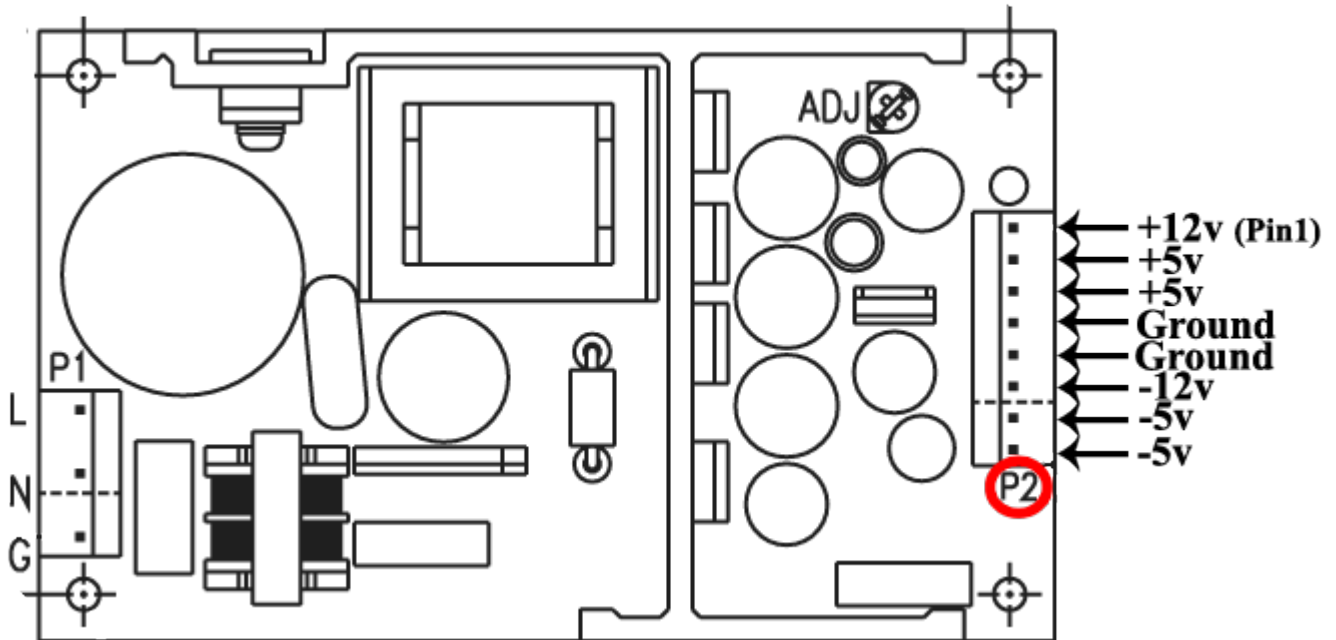
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
- b. If your old Enclosure has removable Pin style connectors, then use the Male Pin Connectors to make the connection. Wire the Male Pin Connector tails to connect to the MTA156, 5 Position connector already connected to the Universal PSU.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below).
Note: Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



- c. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 1. Pin 1 (+12v): Yellow (sometimes White with Orange Stripe)
 2. Pin 2 or 3 (+5v): Orange
 3. Pin 4 (Ground): Black
 4. Pin 5 (Ground): Black
 5. Pin 6 (-12v): Green (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- d. Install the Strain Relief Cap onto the top of the MTA156 connector.

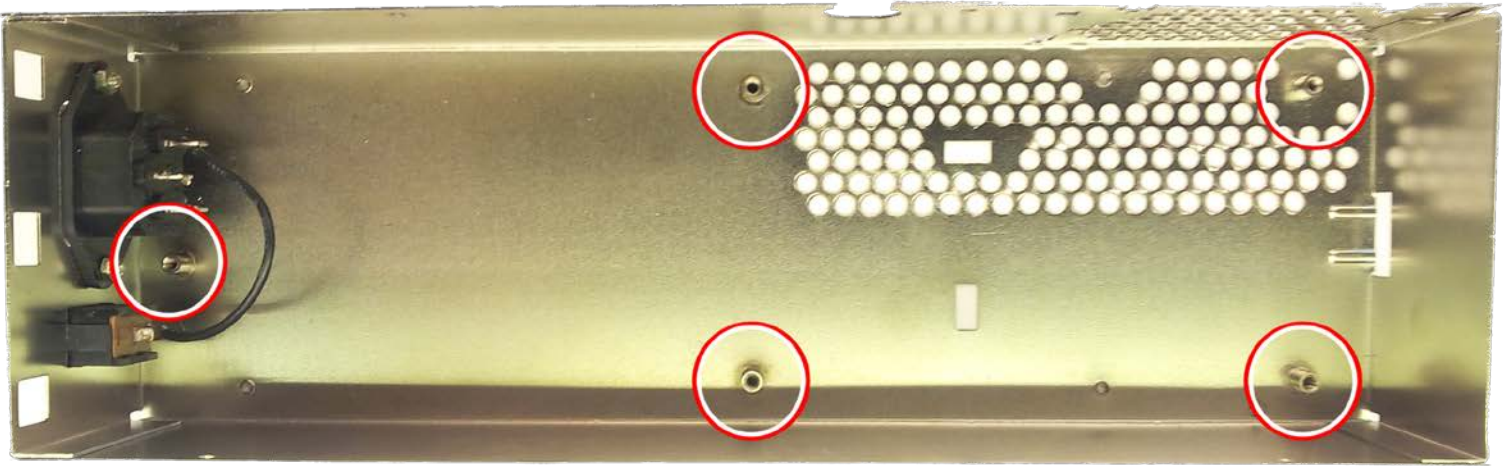
9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

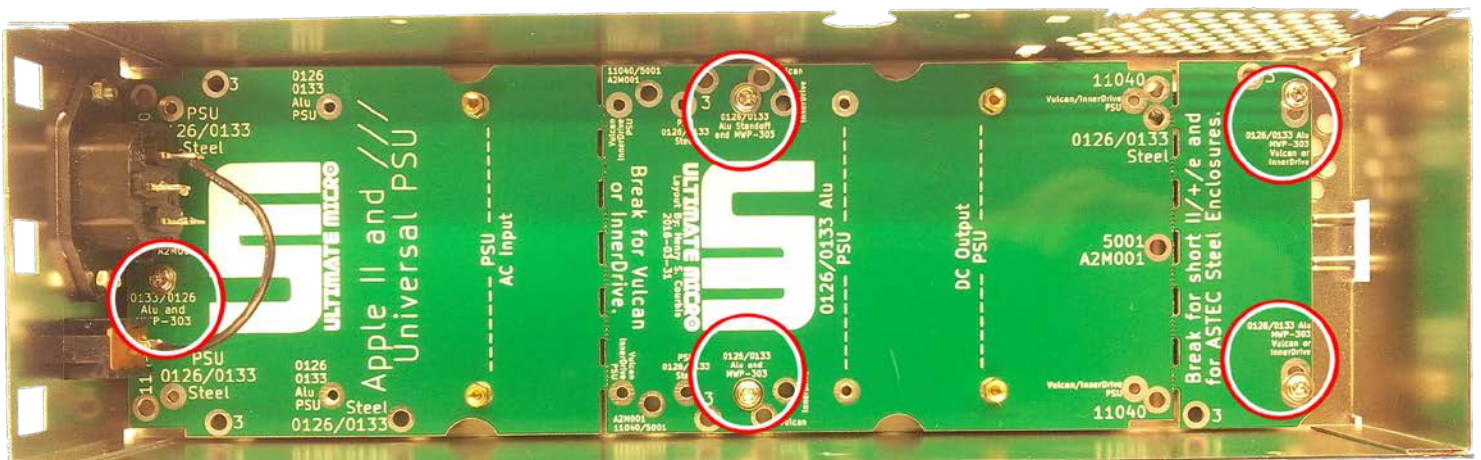
10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.
- Replace the enclosure screws removed in Step 1.
 - Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.
11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

AE HD PSU - MWP-303:

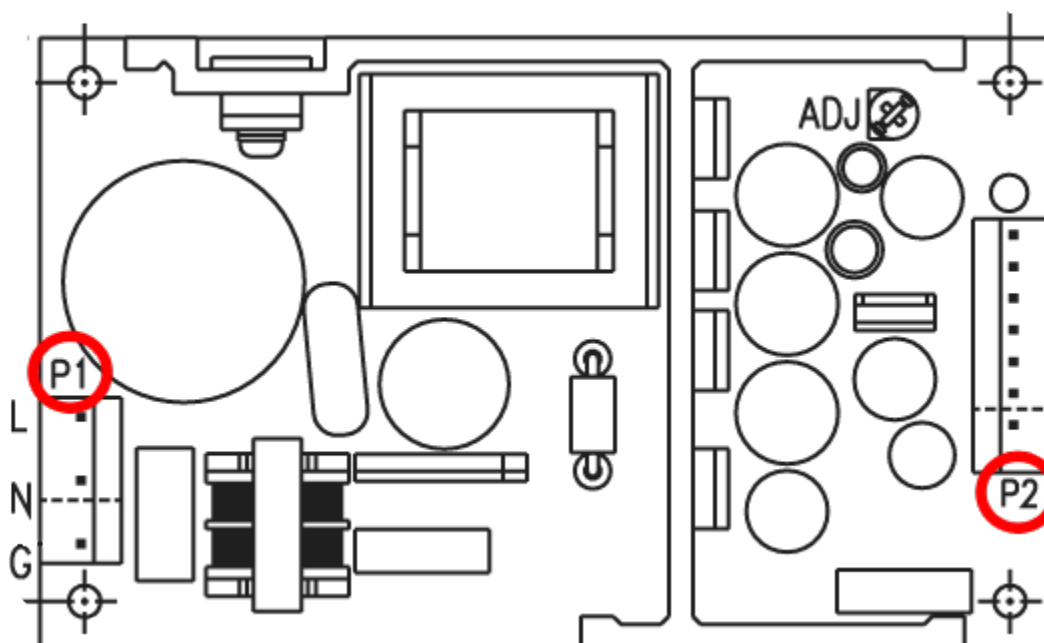
1. To open your Apple II Power Supply Enclosure start by removing the 4 screws on the top edge. The top panel of the enclosure can then be removed. It's easiest to pry the top open near the fan cutout. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.
2. You will find the old PSU PCB mounted to the enclosure with 5 screws. Remove these screws. The old PSU PCB should now be loose, however the AC and DC wires are securing it to the case.



3. Next, remove the 2 AC wires from the old PSU PCB. They should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure.
4. Removal of the old PSU PCB.
 - a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
 - b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.
5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.
 - a. The mounting points on the Universal PCB are clearly marked for this Enclosure. Be sure to reuse all mounting screws.

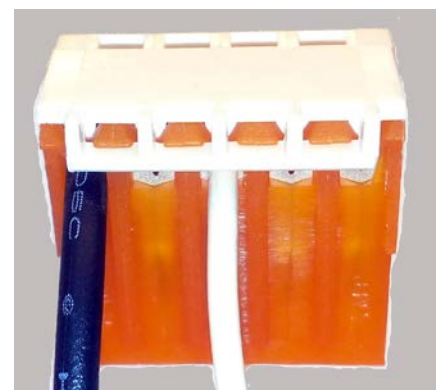
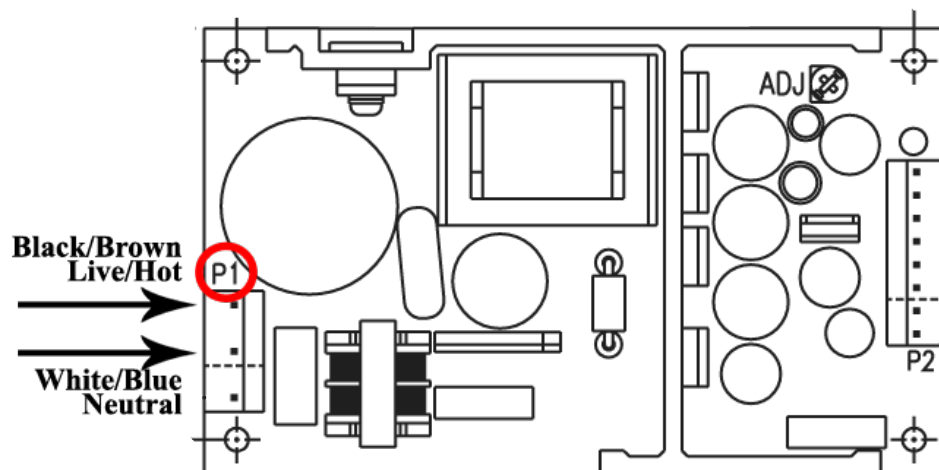


6. Next, mount the new Universal PSU to the brass standoffs on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.



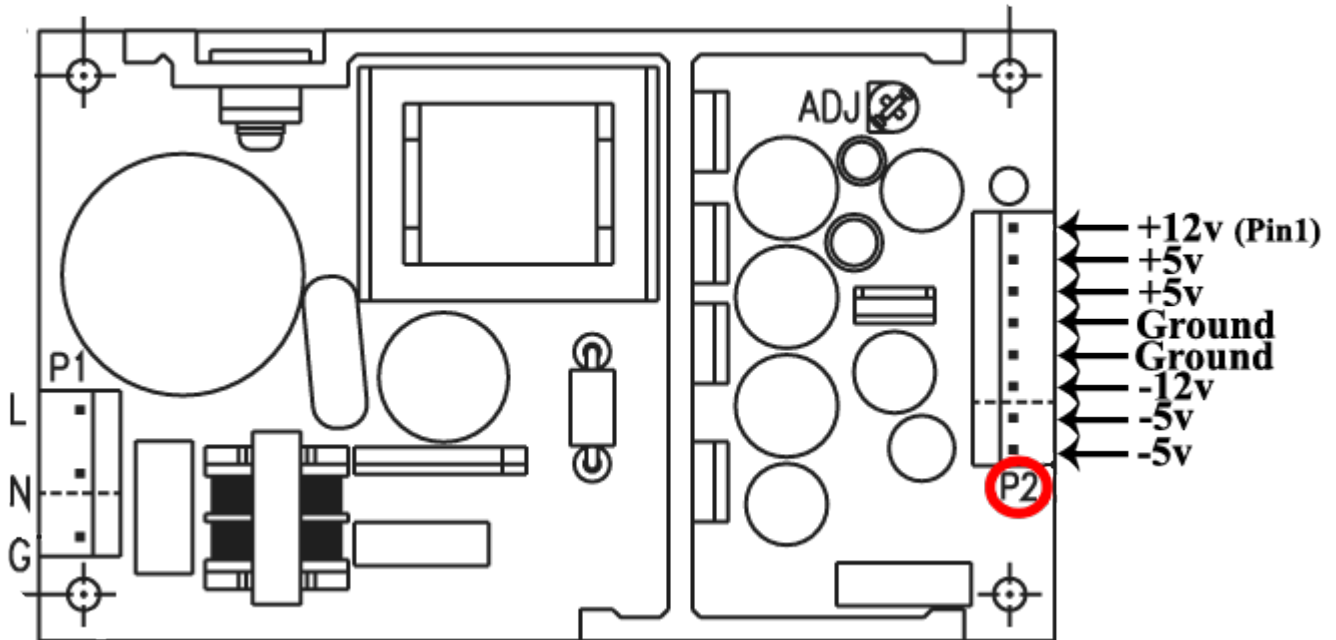
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below). **Note:** Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



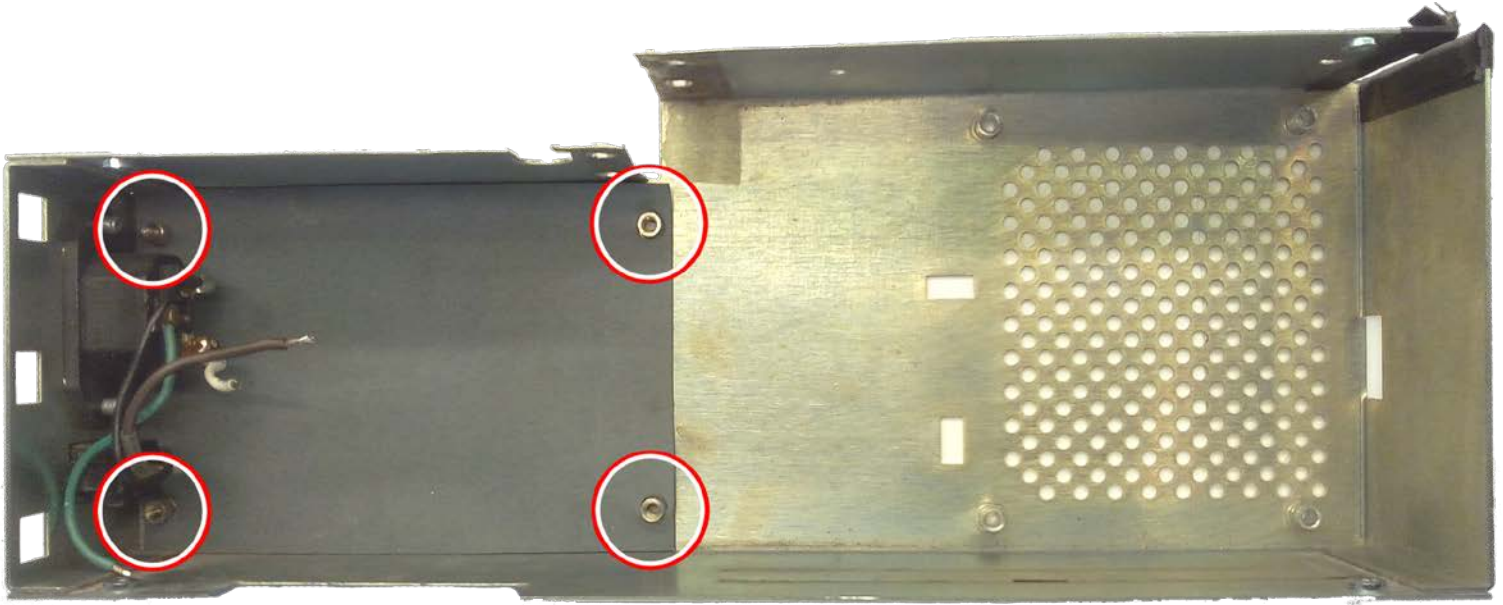
- i. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 1. Pin 1 (+12v): Yellow (sometimes White with Orange Stripe)
 2. Pin 2 or 3 (+5v): Orange/Red
 3. Pin 4 (Ground): Black
 4. Pin 5 (Ground): Black
 5. Pin 6 (-12v): Green/Brown (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- c. Install the Strain Relief Cap onto the top of the MTA156 connector.

9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.
- CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.**
10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.
- Replace the enclosure screws removed in Step 1.
 - Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.
11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

InnerDrive:

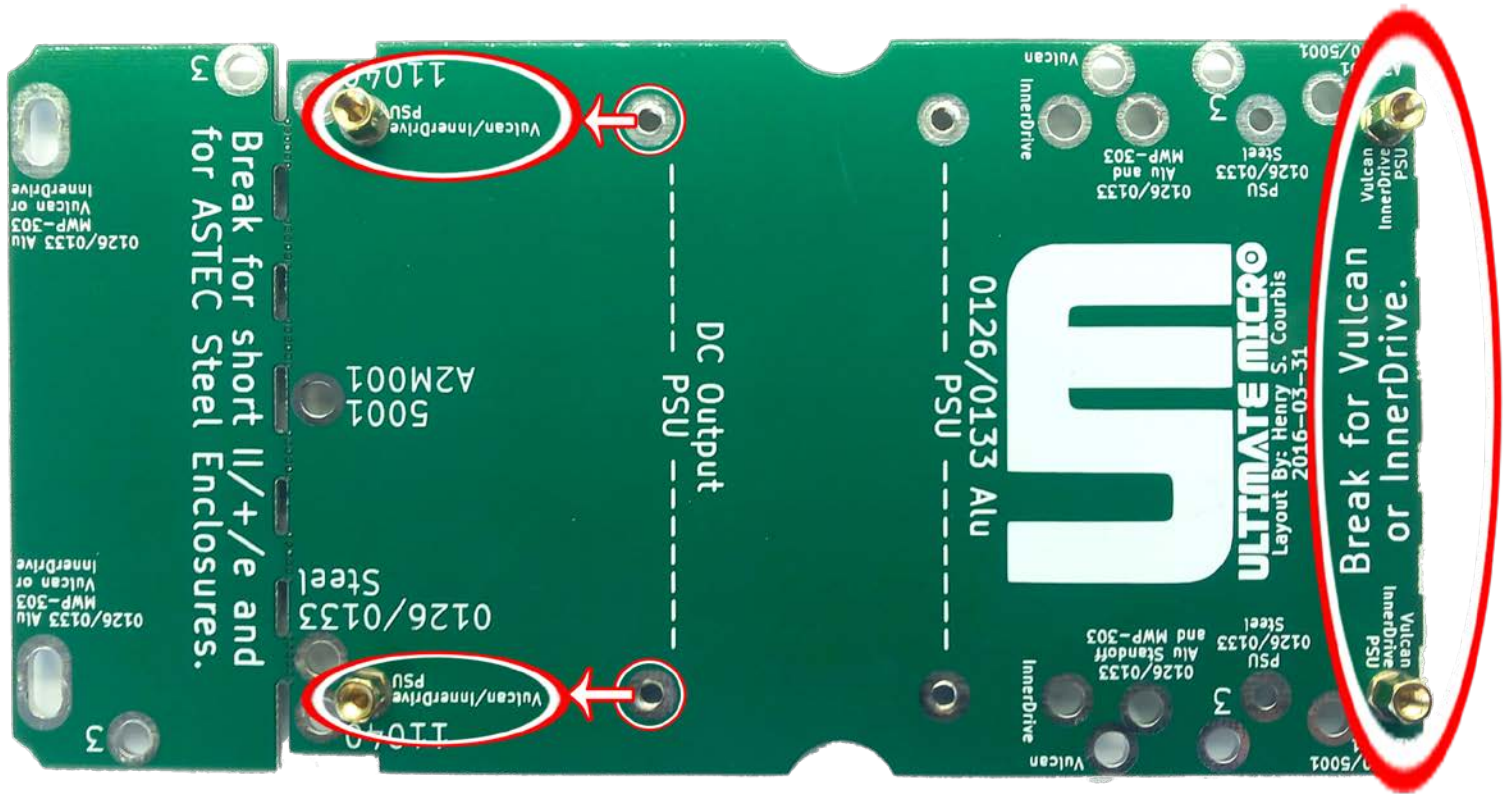
Note: There will not be room for a 3.5" hard drive once the Universal PSU Kit has been installed.

1. To open your Apple II Power Supply Enclosure start by removing the 4 screws on the top edge. The top panel of the enclosure can then be removed. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.
2. You will find the old PSU PCB mounted to the enclosure with 4 screws. Remove these screws. The old PSU PCB should now be loose, however the AC and DC wires are securing it to the case.



3. Next, remove the 2 AC wires from the old PSU PCB. They should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure.
4. Removal of the old PSU PCB.
 - a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
 - b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.

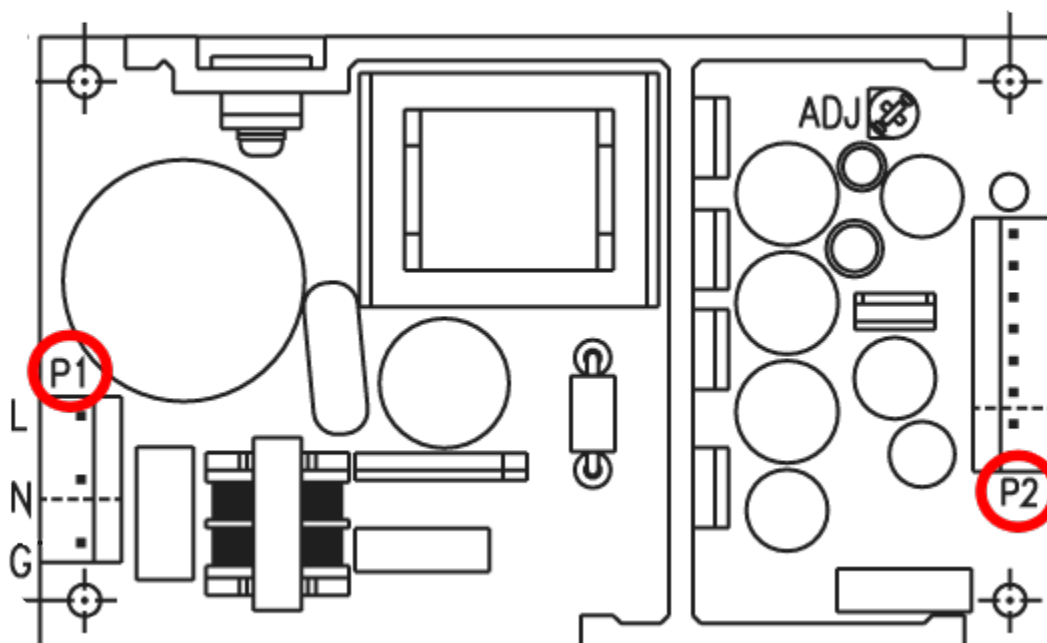
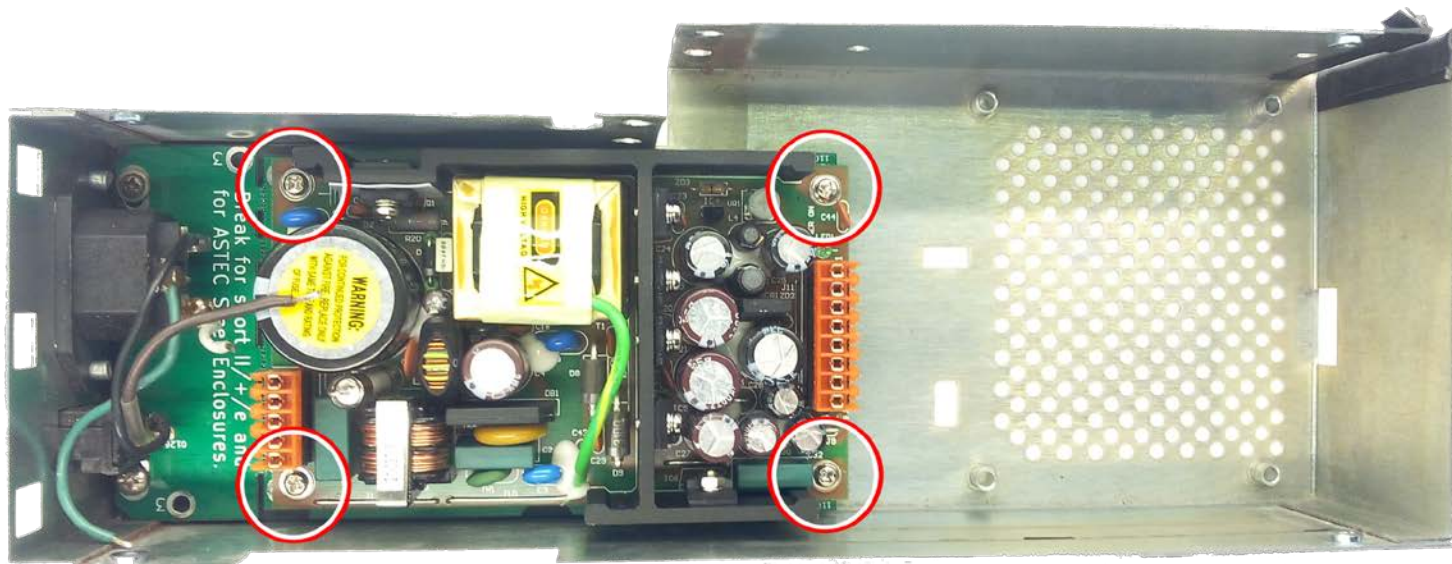
5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.
- For this Enclosure be sure to break the Universal PCB in the middle as noted on it. Lay the Universal PCB on the edge of a counter or desk and while securely holding the main part of the PCB apply pressure to the small end to be broken off. It is surprisingly strong, however it will break cleanly.
 - Also be sure to move the Brass Standoffs from their pre-installed locations to the ones marked "Vulcan/InnerDrive PSU".



- The mounting points on the Universal PCB are clearly marked for this Enclosure. Be sure to reuse all mounting screws.

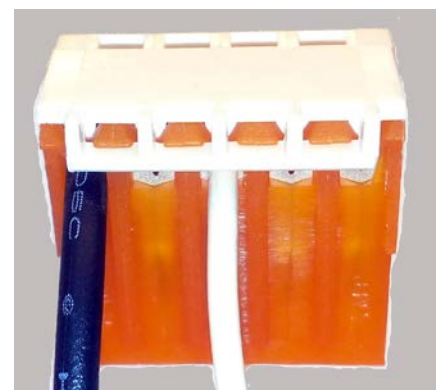
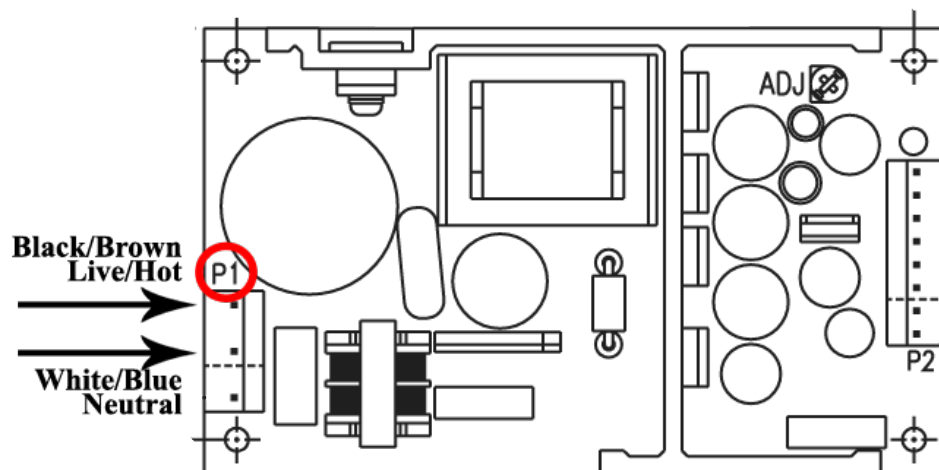


6. Next, mount the new Universal PSU to the brass standoffs on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.



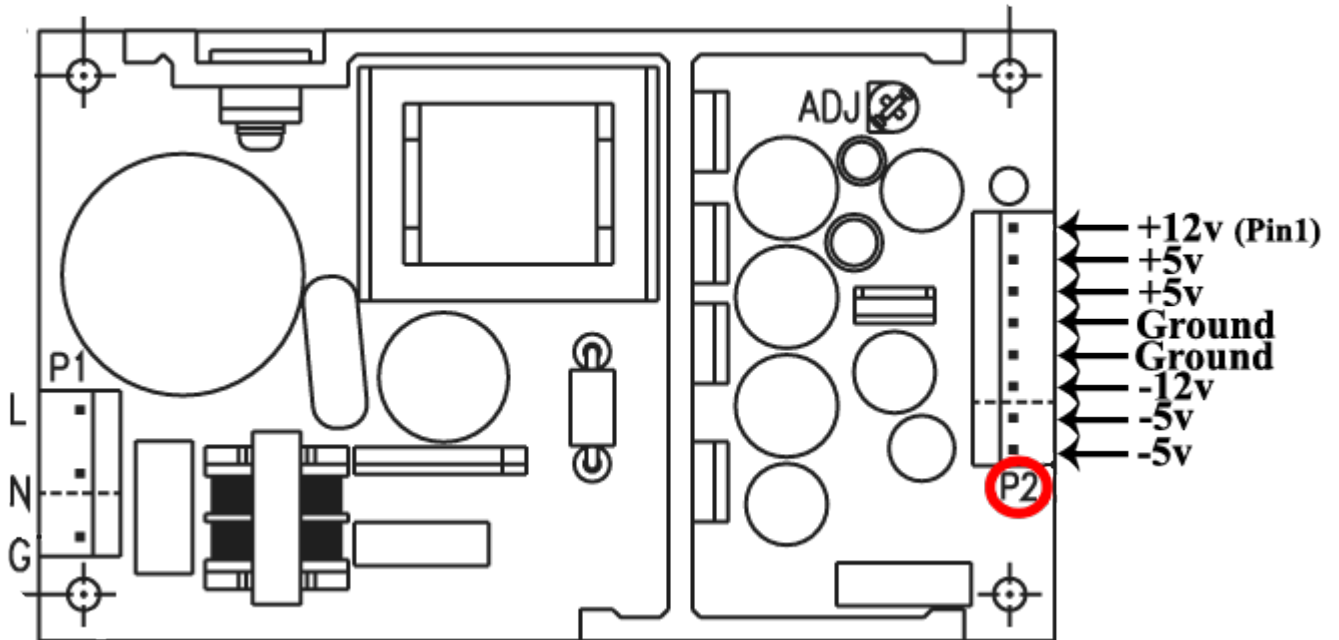
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below). **Note:** Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



- c. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 1. Pin 1 (+12v): Yellow (sometimes White with Orange Stripe)
 2. Pin 2 or 3 (+5v): Orange
 3. Pin 4 (Ground): Black
 4. Pin 5 (Ground): Black
 5. Pin 6 (-12v): Green (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- d. Install the Strain Relief Cap onto the top of the MTA156 connector.

9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.

- a. Replace the enclosure screws removed in Step 1.
- b. Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.

11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

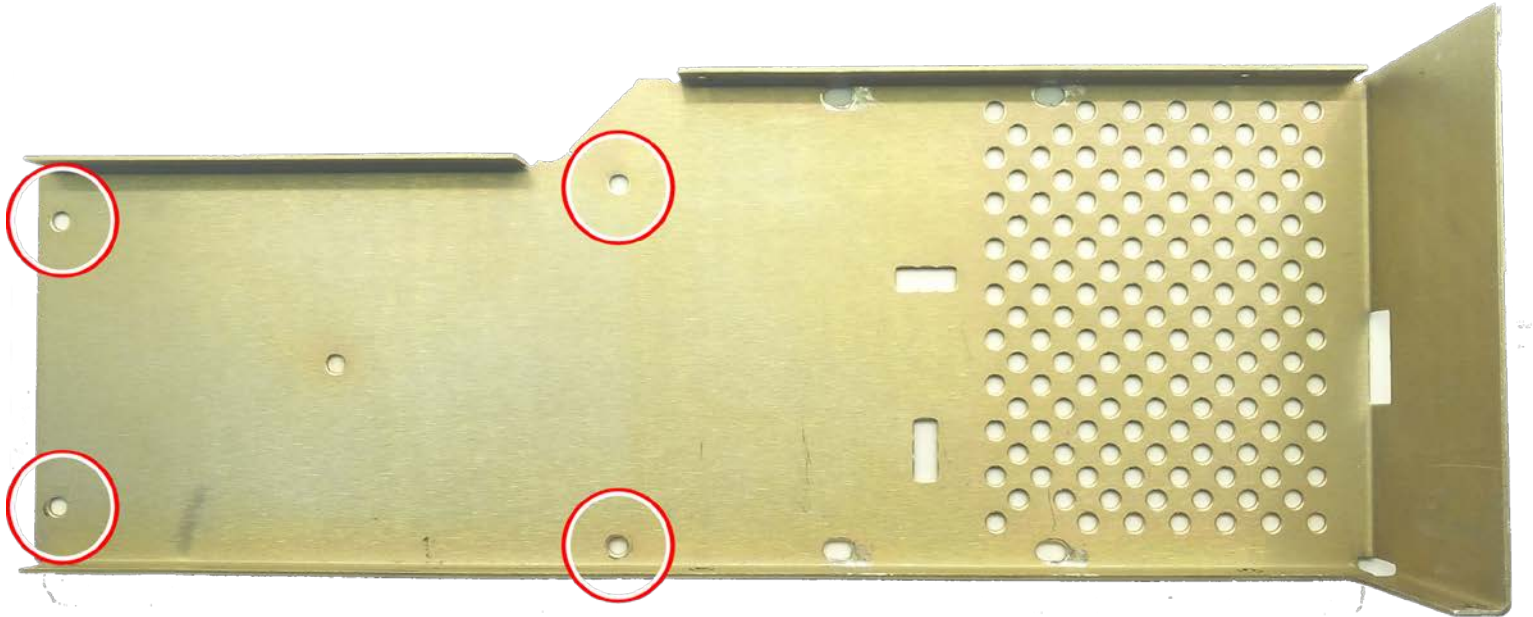
Vulcan: This Add-on Kit is slightly different than the standard Universal PSU Kit. Please review and familiarize yourself with the extra included hardware. Contact Support if you find any discrepancies.

The following items are included with the Vulcan Add-on Kit:

		
4x Phillips Screw, M3	4x Hex Standoffs, M3	4x Hex Nuts, M3

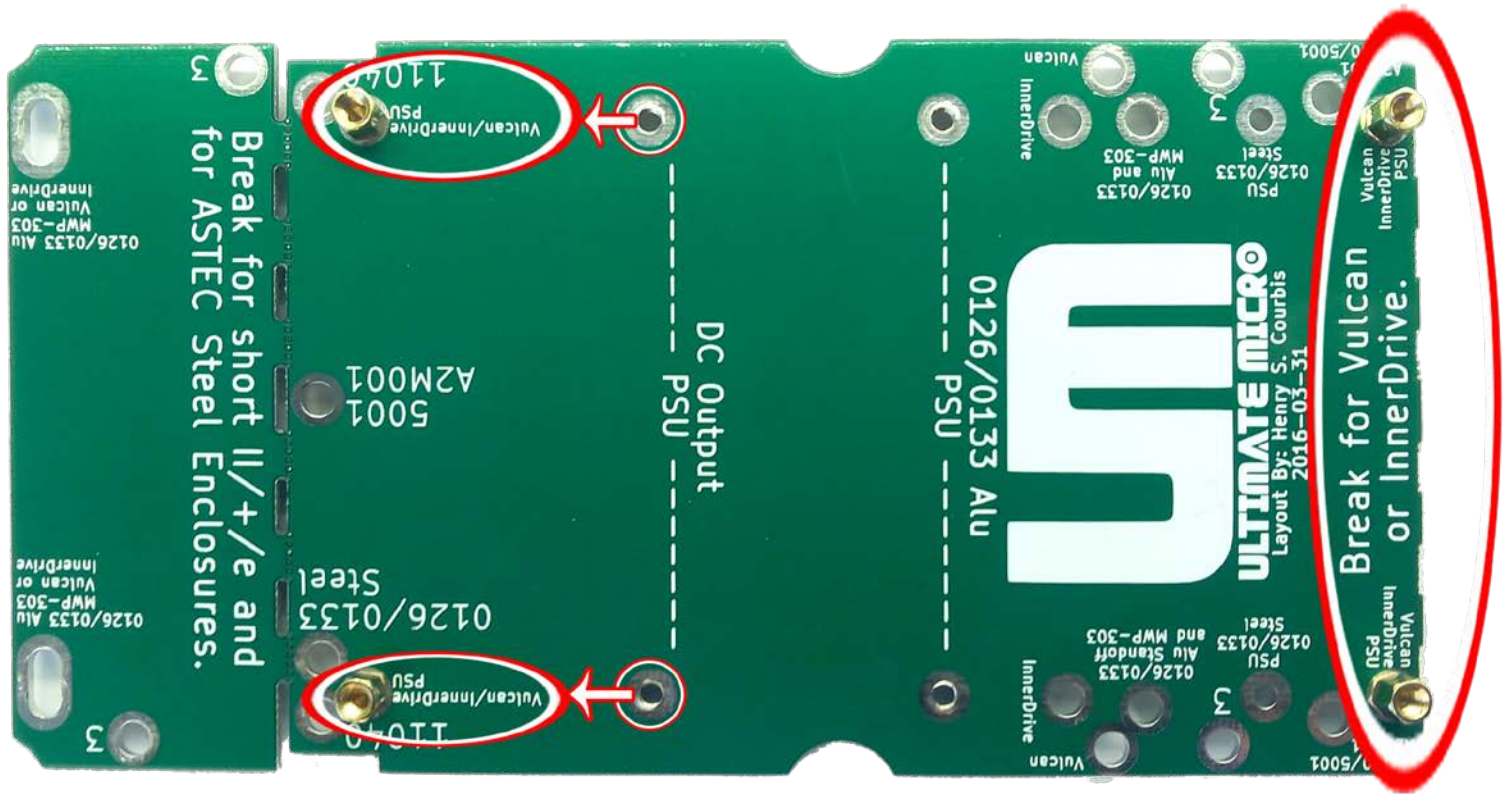
Note: There will not be room for a 3.5" hard drive once the Universal PSU Kit has been installed.

1. To open your Apple II Power Supply Enclosure start by removing the 6 screws along the bottom edge, and one on the top, rear corner. The bottom panel of the enclosure can then be removed. Be sure not to remove any other screws, or be sure to replace them if you accidentally did.
2. You will find the old PSU PCB mounted to the enclosure with 4 screws. Remove these screws. The old PSU PCB should now be loose.

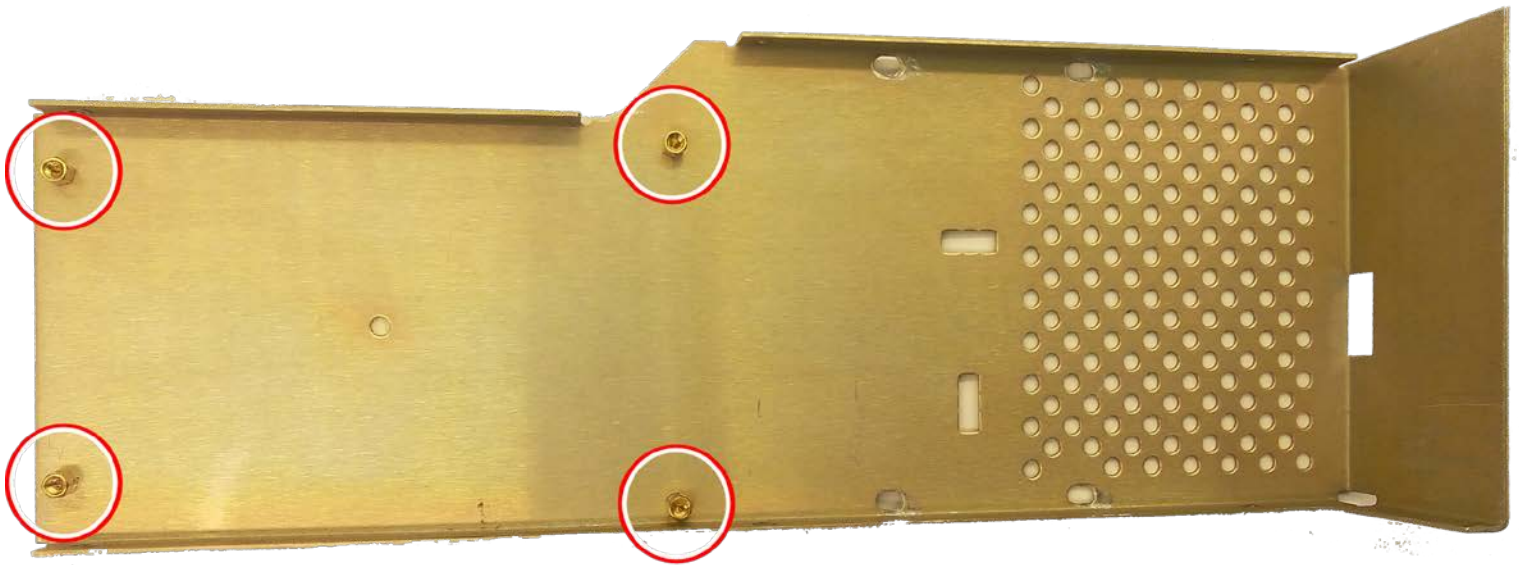


3. Next, remove the 2 AC wires from the old PSU PCB. They should be cut as close to the old PSU PCB as possible. Leave the green ground wire connected to the enclosure.
4. Removal of the old PSU PCB.
 - a. If you purchased a new DC Output Connection Cable then you will remove the old PSU PCB, DC Output Connection Cable, and grommet from the enclosure as one piece. The grommet can be removed by using pliers and turning it 90-degrees which will unlock it from the enclosure.
 - b. If you didn't purchase a DC Output Connection Cable then be sure to cut the cable as close as possible from the old PSU PCB and leave it installed in the enclosure.

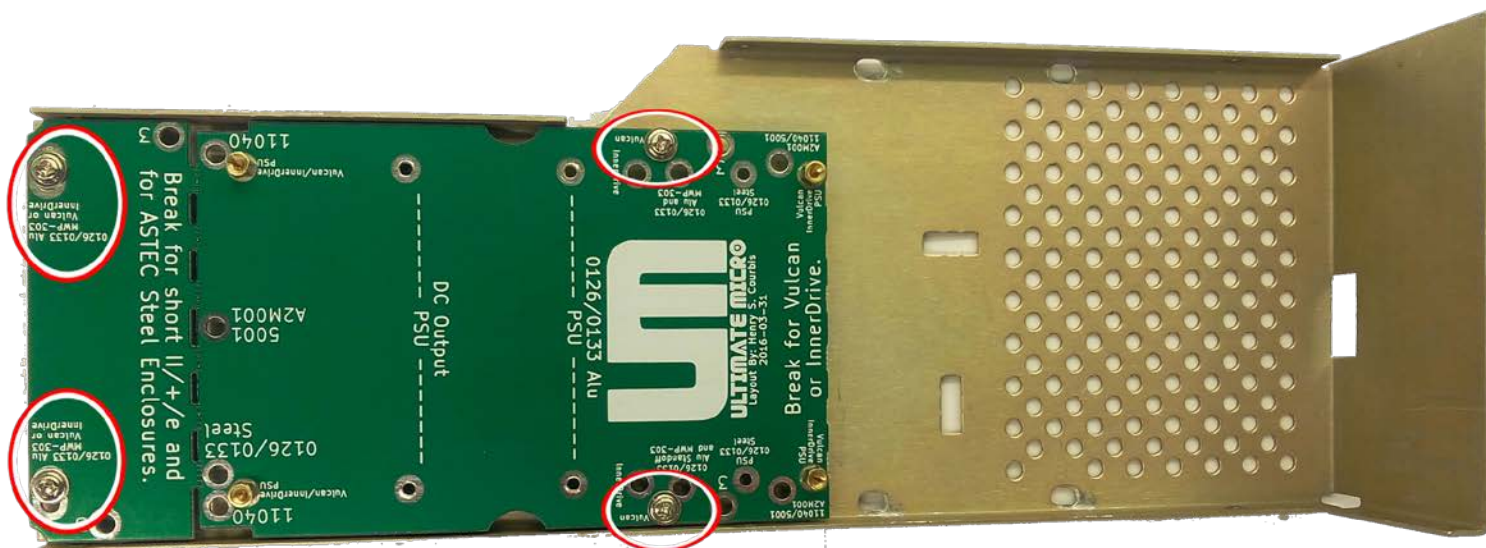
5. Once the old PSU PCB has been removed you can now mount the new Universal PCB.
- For this Enclosure be sure to break the Universal PCB in the middle as noted on it. Lay the Universal PCB on the edge of a counter or desk and while securely holding the main part of the PCB apply pressure to the small end to be broken off. It is surprisingly strong, however it will break cleanly.
 - Also be sure to move the Brass Standoffs from their pre-installed locations to the ones marked "Vulcan/InnerDrive PSU".



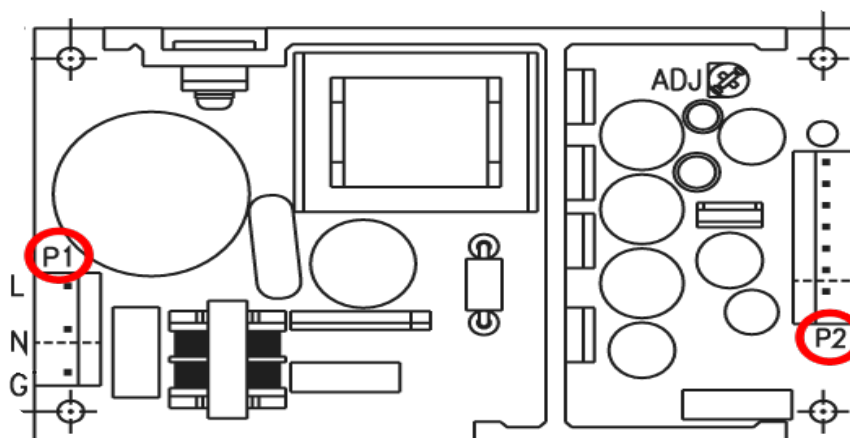
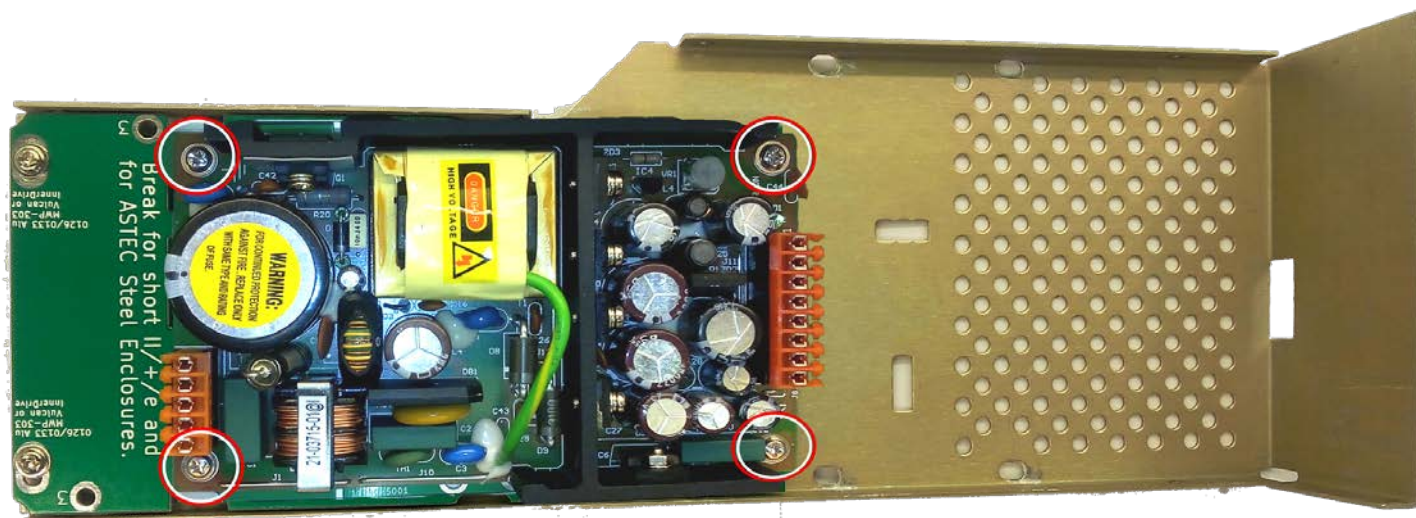
- Next mount the 4 Brass Standoffs with the small Nuts from the included hardware to the enclosure as pictured.



- d. Finally, mount the Universal PCB to the Brass Standoffs you just installed. The mounting points on the Universal PCB are clearly marked for this Enclosure. Be sure to reuse all mounting screws.

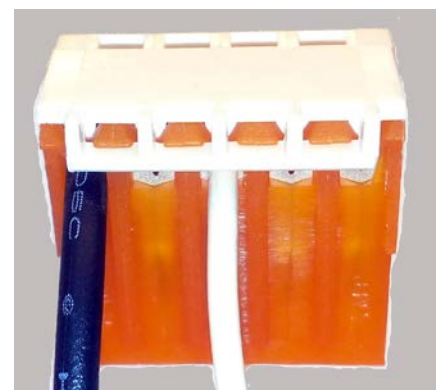
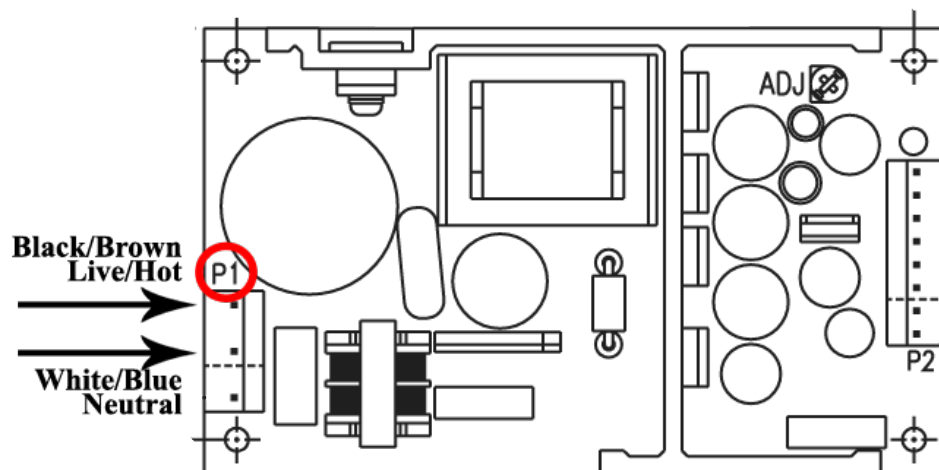


6. Next, mount the new Universal PSU to the brass standoffs on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.



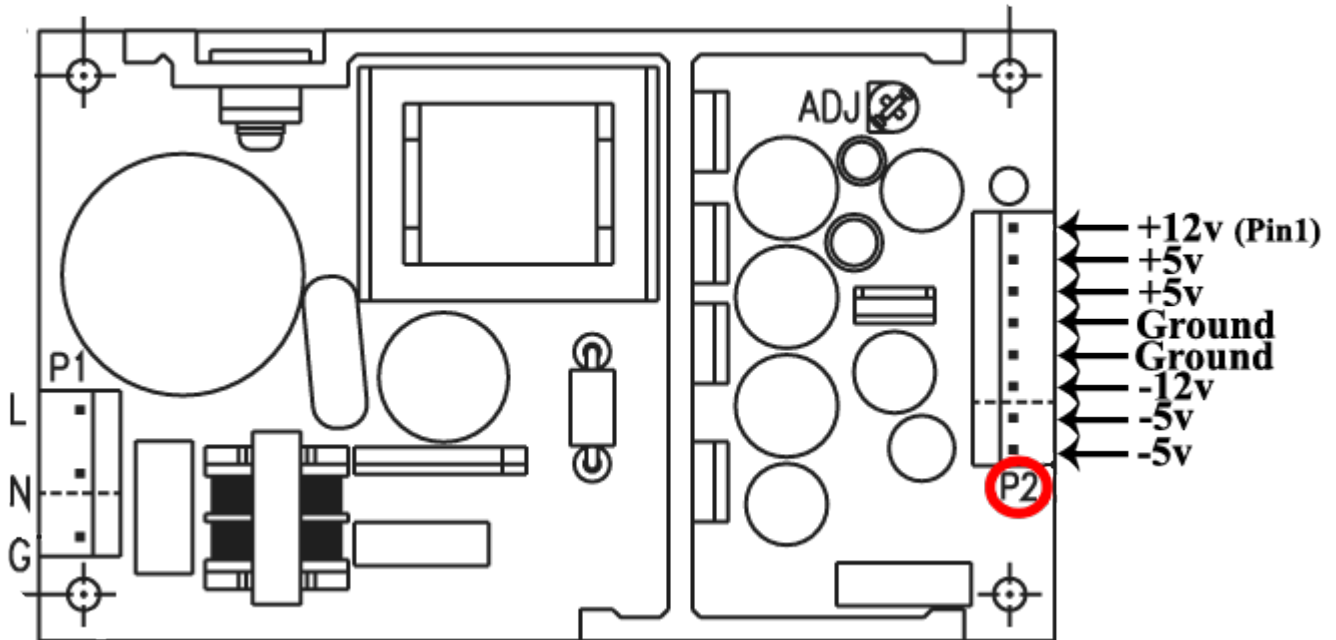
7. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU. If the AC wires are too short to reach the MTA156, 5 Position connector and they DO NOT have Pin style connectors then you can use the 18AWG wire from the Male Pin Connectors included with the Kit and the included Splices. Just cut the wire from the Male Pin Connector. The Red Scotchlok Quick Crimp Splice will require pliers.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below). **Note:** Some AC wires are very thin. We have included an extra MTA156, 5 Position, 20AWG Yellow Connector for use with these smaller AC wires. If in doubt you can try to use the Orange MTA156, 5 Position connector and if you find the Universal PSU won't turn on then you can redo the AC connections using the Yellow MTA156, 5 Position connector. In contrast, some wires are thicker and will require a little extra work to insert them in to the MTA156, 5 Position connector.
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple II Enclosure and the mounting screws you already installed in Step 6.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



8. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. You can reuse the original grommet if you wish, and there should be one included with the new DC Output Connection Cable if needed. Use pliers to turn the grommet 90 degrees to lock it in place once installed.
- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED "Pin 1" (+12v) for reference (also marked on the PSU PCB to the right of the connector).



- i. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 1. Pin 1 (+12v): Yellow (sometimes White with Orange Stripe)
 2. Pin 2 or 3 (+5v): Orange
 3. Pin 4 (Ground): Black
 4. Pin 5 (Ground): Black
 5. Pin 6 (-12v): Green (sometimes White with Blue Stripe)
 6. Pin 7 or 8 (-5v): Blue
- c. Install the Strain Relief Cap onto the top of the MTA156 connector.

9. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

10. All that is left is to reassemble the enclosure and connect the DC Output Cable to your Apple motherboard.

- a. Replace the enclosure screws removed in Step 1.
- b. Check for any rattling noises coming from the enclosure with some light shaking. If anything is heard be sure to reopen the enclosure to investigate and remove the loose item(s) as they could cause issues or damage during use.

11. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple II/+e or Clone computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.








A2M001: See 606-5001.

These Enclosures are somewhat rare. Perhaps consider keeping your Enclosure in its original state for posterity. There are several other more common Enclosure options to choose from which can easily be sourced. Early Apple II collectors would gladly trade you any other Enclosure for your original A2M001.

Note: Some early Enclosures will have rivets that will need to be drilled and removed.

AA11190 - Apple III: This Kit is slightly different than the standard Universal PSU Kit. Please review and familiarize yourself with the included hardware. Contact Support if you find any discrepancies.

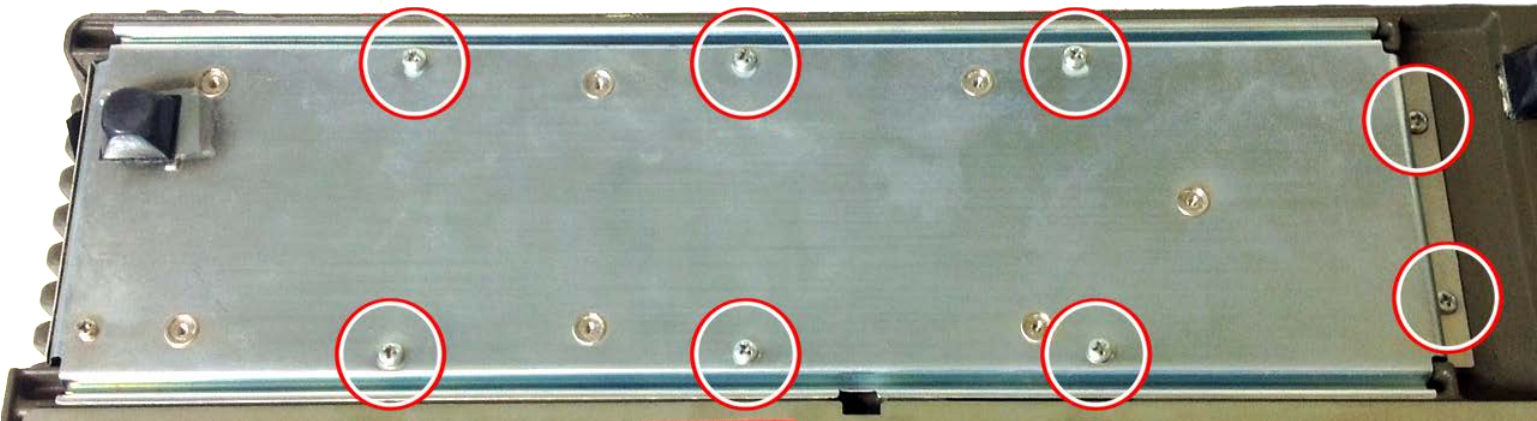
The following items are included with the /// Kit:

 Universal PSU	 Universal PCB	 Male Pin & Housing Wire	 Female Spade & Wire
 5-pos Strain Relief Cap	 8-pos Strain Relief Cap	 4x Phillips Screw, M3	

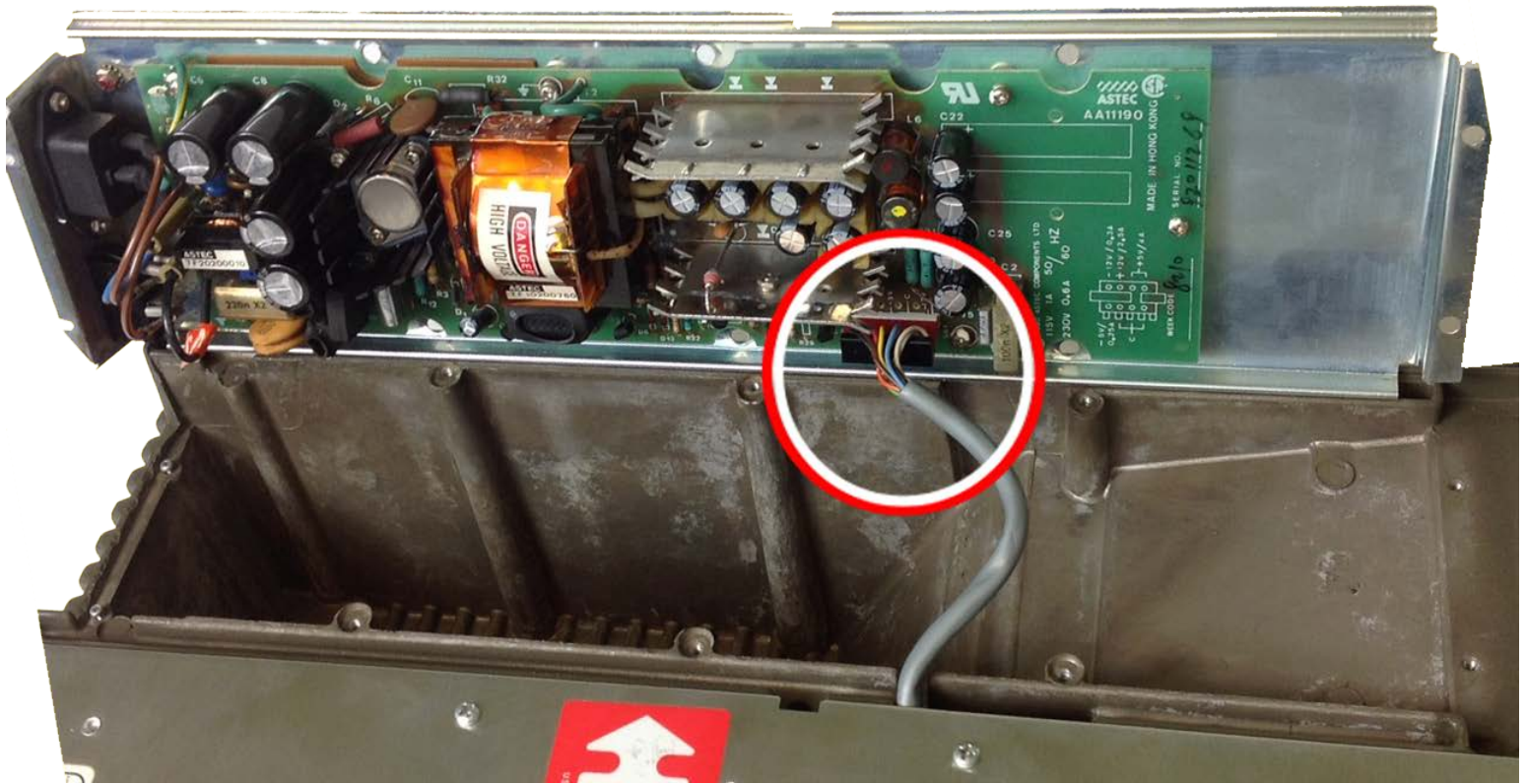
1. Turn your Apple /// over. Loosen but don't remove the two small screws next to the Power Switch holding the Power Supply Pan flange down.



2. Remove the 8 screws securing the Power Supply.



3. Flip the Power Supply up. You should now be able to remove the DC Output Cable.



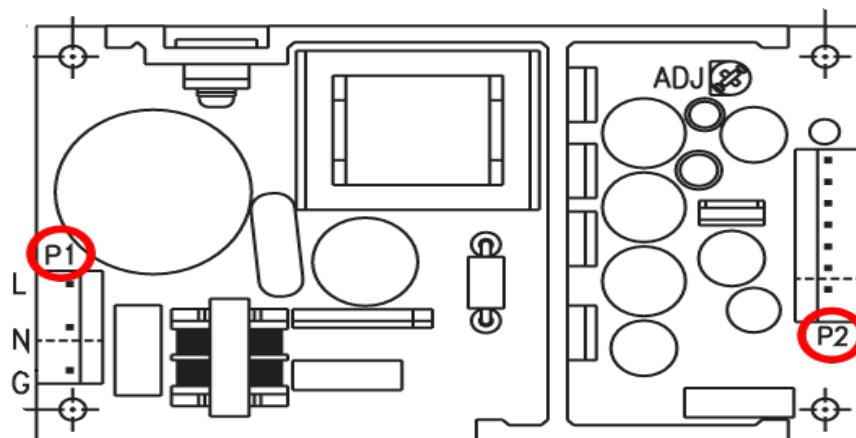
4. Remove the brown wire from the Power Switch, and blue wire from the PCB.



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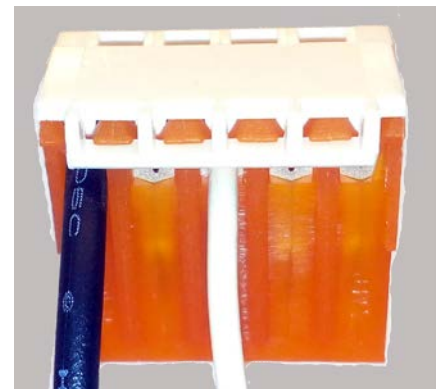
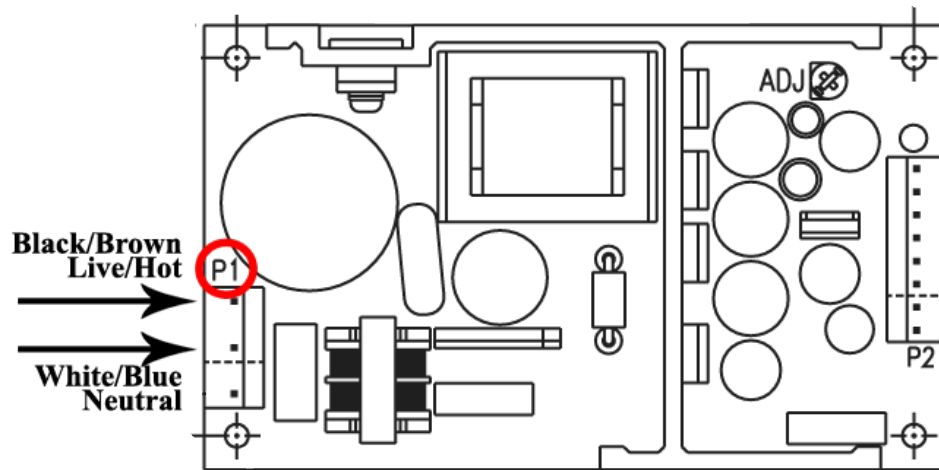
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- A close-up photograph of the Ultimate Micro PSU board. The green PCB features the 'Ultimate Micro' logo. Two red circles highlight the power switch and the terminal block. The power switch is a black rectangular component with a silver push-button. The terminal block is a yellow plastic component with multiple terminals. Wires of various colors (blue, brown, green, red) are connected to the terminals. The board is populated with various electronic components, including capacitors and resistors.

9. Next, mount the new Universal PSU to the brass standoffs on the Universal PCB with the M3 screws enclosed. The “AC End” (labeled “P1” on the PSU) has the orange MTA156, 5 Position connector already installed on one side, and the “DC End” (labeled “P2” on the PSU) has the orange MTA156, 8 Position connector already installed on the other side. Be sure to mount the new Universal PSU correctly.



10. Connect the AC wires to the Universal PSU.

- a. The AC wires should easily reach the MTA156, 5 Position connector pre-installed on P1 of the Universal PSU.
 - i. The **Black** or **Brown** wire in the enclosure will be the **HOT** or the **LIVE** wire. The White or Blue wire will be Neutral.
 - ii. Using a small slotted screwdriver, push the **Black** or **Brown** wire to the MTA156, 5 Position connector in the location closest to the large capacitor near the middle of the PSU PCB (see below for diagram). No need to strip or prep the wire in any way. The MTA156 connector is designed to automatically cut the insulation of the wire and make a permanent connection. Just make sure the wire is fully inserted into the MTA156 connector (see example pictures below).
 - iii. The other remaining wire goes exactly in the middle of the MTA156, 5 Position connector. Nothing is connected to the other positions. Ground is supplied to the Universal PSU using the frame of the Apple /// Pan and the mounting screws you already installed in Step 9.
 - iv. Install the Strain Relief Cap onto the top of the MTA156 connector.



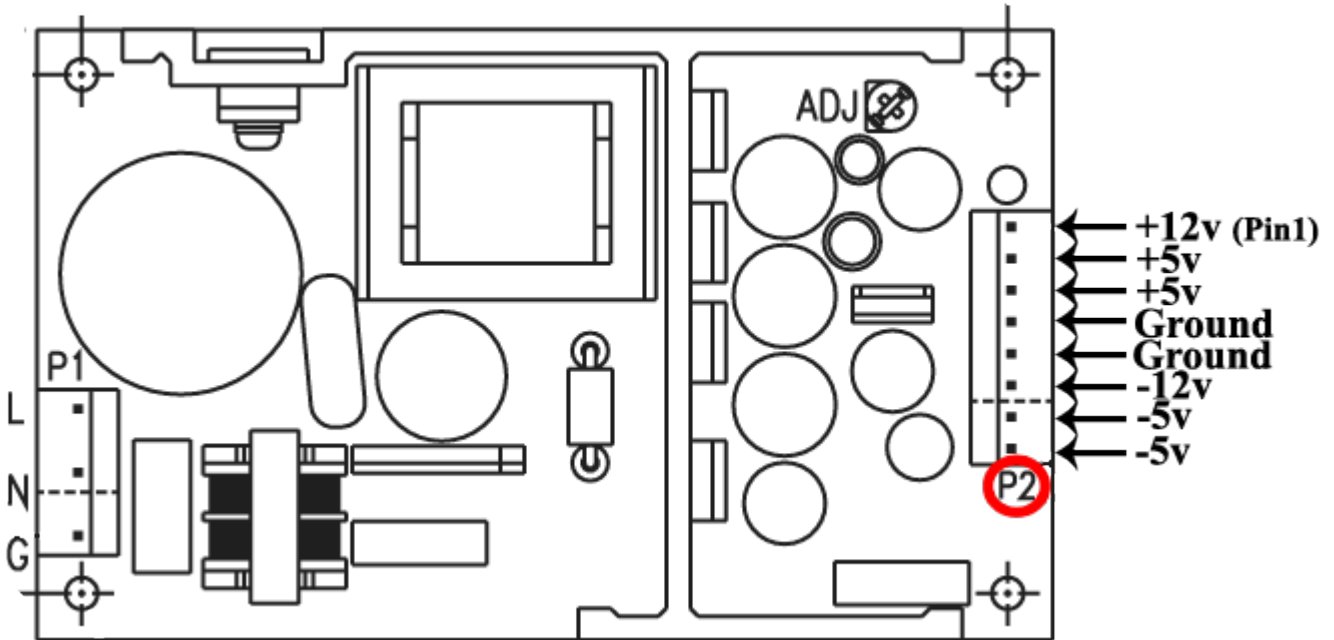
11. Connect the DC Output Connection Cable.

- a. If you purchased a new DC Output Connection Cable you can now connect it on the Universal PSU. Remove the existing MTA156, 8 Position connector already installed to the Universal PSU, then install the new DC Output Connection Cable.

Note: Due to the complexity of the /// DC Output Connection Cable and the ease at which a wiring mistake can be made we **HIGHLY RECOMMEND** purchasing a new DC Output Connection Cable.

- b. If you are reusing the original DC Output Connection Cable then you need to connect the wires to the MTA156, 8 Position connector already connected to P2 the Universal PSU. As with the AC side MTA156 Connector you will notice it is only possible to connect the wires so they run away from the Universal PSU. So we will call the MTA156 connector position closest to the Power LED “Pin 1” (+12v) for reference (also marked on the PSU PCB to the right of the connector).

- i. **Note: Install 2 wires per MAT156 connector position.**



- ii. Push the wires into the MTA156, 8 Position connector using a small Slotted Screwdriver in the following order:
 - 1. Pin 1 (+12v)
 - 2. Pin 2 or 3 (+5v)
 - 3. Pin 4 (Ground)
 - 4. Pin 5 (Ground)
 - 5. Pin 6 (-12v)
 - 6. Pin 7 or 8(-5v)
- c. Install the Strain Relief Cap onto the top of the MTA156 connector.

12. Now would be a good time to recheck all your connections to make sure they are secure and wired correctly. If you have a multimeter it would be best to perform a “continuity test” on all connections as well. You can also turn on the Universal PSU, with the enclosure open and not connected to your Apple, and use the multimeter to check the output voltages as referenced above. There is a Power LED next to the DC Output Connector which will help aid in confirming AC is correctly connected to the Universal PSU and turned on.

CAUTION: Do not directly touch the Universal PSU or its parts for any reason when AC power is applied as shocking can and will occur. Be sure to wait at least 10 seconds after AC power has been disconnected before directly touching.

13. All that is left is to reassemble the Power Supply to the Apple /// and connect the DC Output Cable to your motherboard.

a. Replace the screws removed in Step 1 and Step 2.

14. Done! Enjoy another 10+ years of trouble free, clean DC power in your Apple /// computer. And rest assured knowing you have made the best decision possible in extending and protecting the life of you Apple.

Thanks To The Following For Their Help With This Project:

John "Mr. Capacitor" Morris - Test fitting PCBs, measurements, and pics.

Joe "Hello There All You Good People" Strosnider - Doc review and demo video.

Chris "Reverse Mockingboard" Torrence - Doc review and demo video.

David "Email Could Not Be Delivered" Ramsey - /// PSU pics, measurements, and loan of PSU.

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Woz for making the Apple II computer and giving us something fun to learn on.

The Apple II and /// Community - For 10+ years of their continued support and trust.

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