Plasma Interface Connection Kit for Sensor™ THC, Sensor PHC, and Sensor Ti THC

MAXPRO200® Plasma Cutting System

Field Service Bulletin

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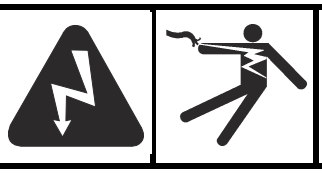
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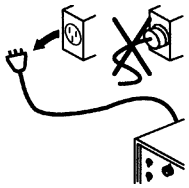
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WARNING!

ELECTRIC SHOCK CAN KILL



Disconnect electrical power before performing any maintenance.

All work requiring removal of the power supply cover must be performed by a qualified technician.

See the *Safety* section of the system's manual for more safety precautions.

Introduction

Purpose

This Field Service Bulletin explains how to install a plasma interface connection in the MAXPRO200 to control the voltage going from the power supply to one of the following height control systems:

- Sensor THC
- Sensor PHC
- Sensor Ti THC

Kit contents

Kit 428023 – Wire group kit for the Sensor THC PCB

Part number	Description	Quantity
229554	Wire group for Sensor THC PCB power	1
229602	Wire group for Sensor THC PCB arc voltage	1

Kit 428022 – Plasma interface connection kit for Sensor PHC and Sensor Ti THC

Part number	Description	Quantity
228256	Sensor PHC/Sensor Ti THC plasma interface assembly	1

Required tools and materials

- Number 2 Phillips screwdriver
- Small blade screwdriver
- 3/8 inch wrench

Install the PCB connection kit for the Sensor THC

The Sensor THC PCB is designed to serve as a voltage divider that lowers the voltage so it can be used to transfer a signal to the height control system.

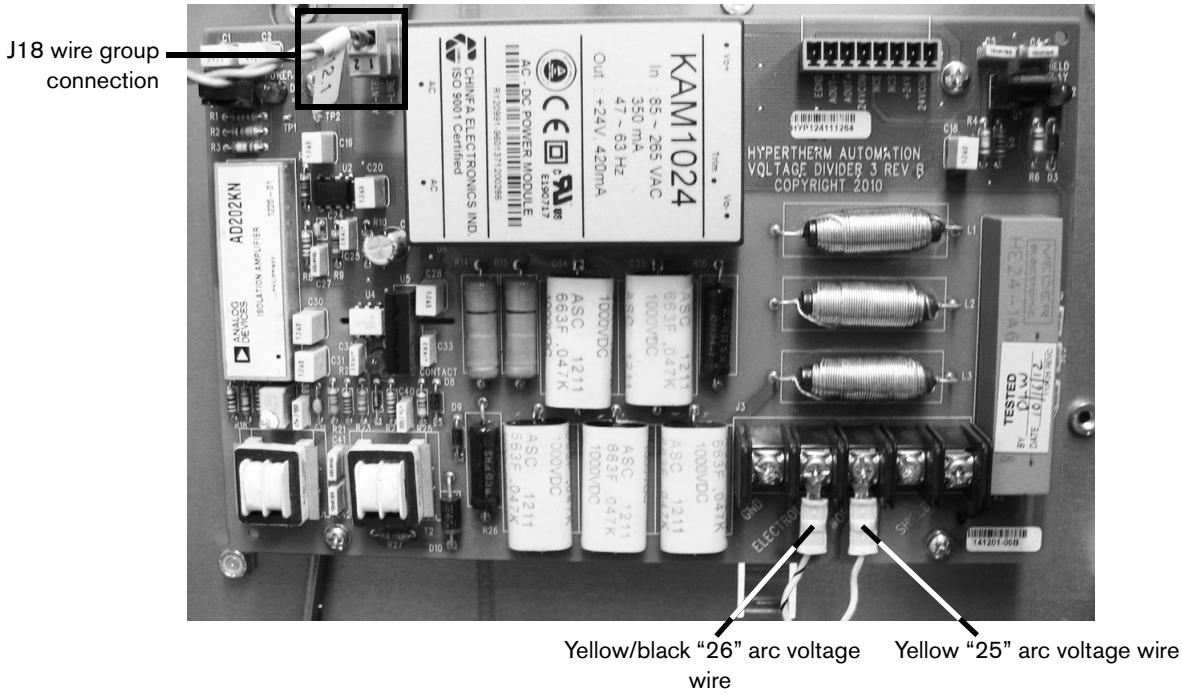
	**CAUTION!**
	**Static electricity can damage circuit boards. Use proper precautions when handling printed circuit boards.** **– Store PC boards in anti-static containers.** **– Wear a grounded wrist strap when handling PC boards.**

1. Obtain the Sensor THC PCB (141201), which is packaged separately from this kit and comes with your Hypertherm computer numerical control (CNC) and Sensor THC systems.

2. Connect the red/black J18 wire group (229554) to the Sensor THC PCB. The wire group's green connector plugs into the J1 connector near the upper left corner of the PCB, as shown in Figure 1. The J18 connection wires deliver 120 VAC power from the power supply (see Step 8 on page 4).

3. Connect the yellow and yellow/black arc voltage wire group (229602) to the J3 terminal strip on the Sensor THC PCB as shown in Figure 1. The arc voltage wires provide a connection to the I/O board (see Step 9 on page 5).
   - ❑ Connect the fork terminal for the yellow/black arc voltage wire (labeled "26") to the connector labeled "ELECTRODE" on the PCB.
   - ❑ Connect the fork terminal for the yellow arc voltage wire (labeled "25") to the connector labeled "WORK" on the PCB.

Figure 1 – The Sensor THC PCB with the wire groups installed



4. Turn OFF the power to the power supply.

5. Use a 3/8 inch wrench to remove the right-side panel from the power supply.

6. Remove the screws from the four standoffs near the top of the center panel. (See Figure 2.)

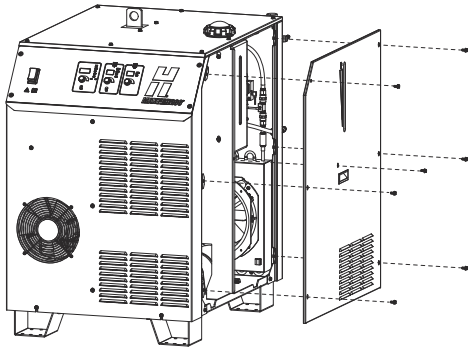
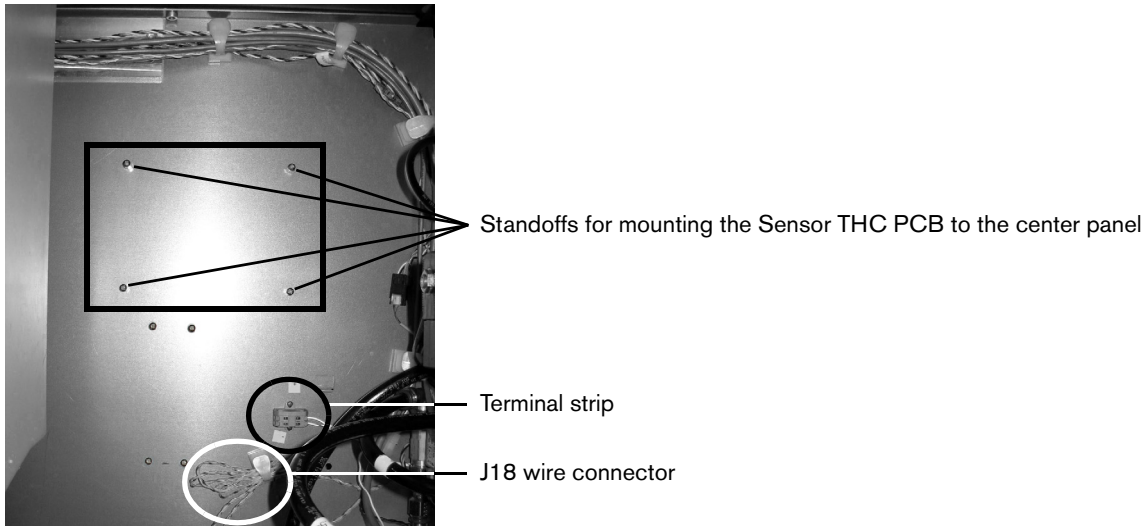


Figure 2 – The standoffs on the center panel in the power supply



7. Mount the Sensor THC PCB to the center panel. Line up the holes in the corners of the PCB with the four standoffs, then secure the PCB to the standoffs using the screws you removed in the previous step.

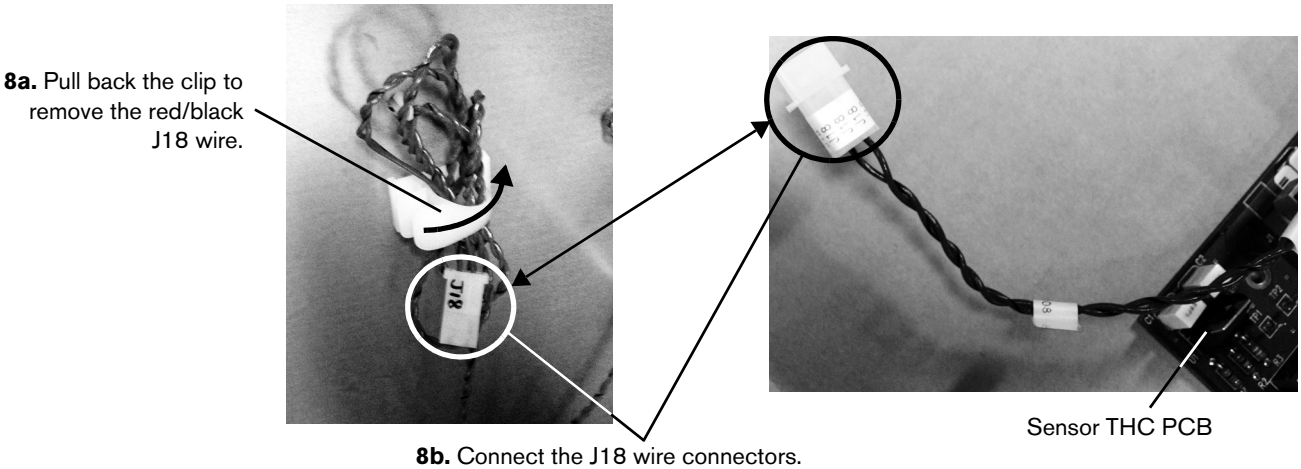
Be sure to install the PCB so that the red/black J18 connection wire is at the top left corner of the board and the yellow and yellow/black arc voltage wires are near the bottom right corner. (See Figure 7 on page 6.)

8. Connect the J18 wire connector from the Sensor THC PCB to the J18 wire connector in the power supply:

a. The J18 wire in the power supply is bundled in a white plastic clip against the center panel, as shown in Figure 2 and in Figure 3, Step 8a. Pull back the clip to remove the wire from it.

b. Push the J18 wire connector from the power supply into the J18 wire connector from the PCB to connect the wires. (See Figure 3, Step 8b.)

Figure 3 – Connecting the J18 wire connectors



8b. Connect the J18 wire connectors.

9. Connect the yellow and yellow/black arc voltage wires from the Sensor THC PCB (see Figure 4) to the left side of the gray terminal strip mounted on the center panel (see Figure 2 on page 4).

The arc voltage wires must be inserted into the correct slots in the terminal strip to ensure matching polarity. The yellow "25" wire has positive (+) polarity; the yellow/black "26" wire has negative (-) polarity.

a. To secure the wires in the terminal strip, first insert a small blade screwdriver in the square opening on the side of the terminal strip, as shown in Figure 5. Pull the screwdriver towards you to open the contact in the circular slot below it.

Figure 4 – Arc voltage wires on the Sensor THC PCB

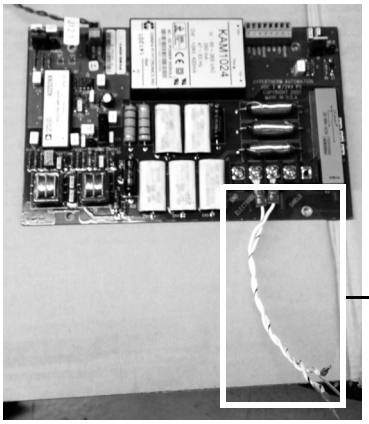
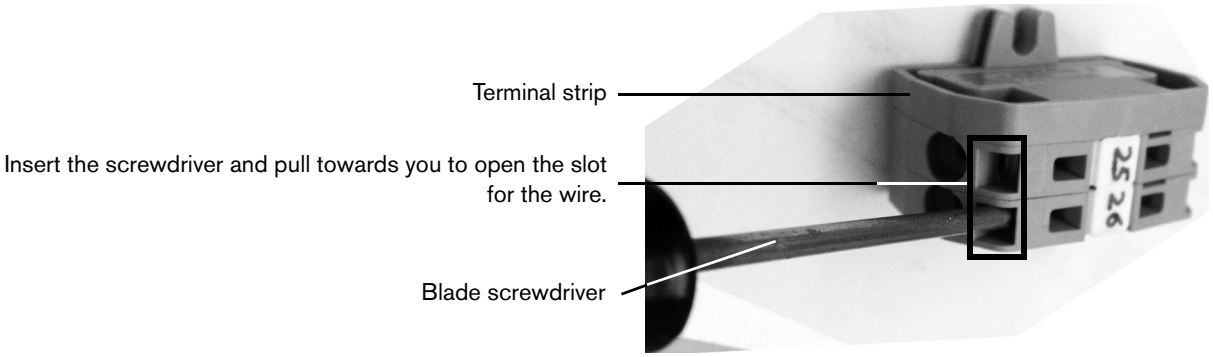


Figure 5 – Opening the contacts in the terminal strip

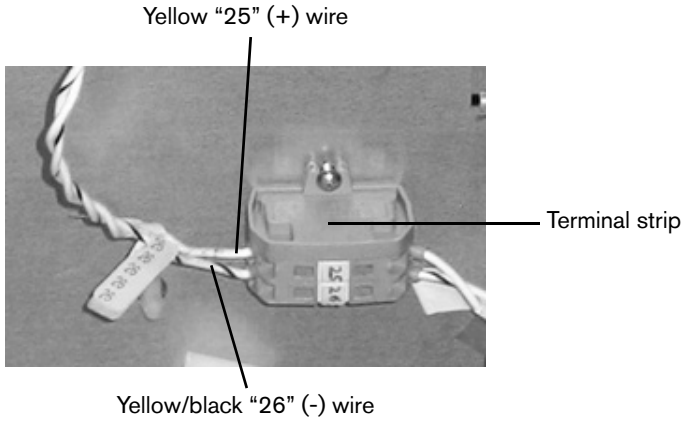


b. Insert the arc voltage wire into the circular slot as follows (see Figure 6):

- Insert the yellow wire (labeled "25") into the circular "25" slot on the side of the terminal strip.
- Insert the yellow/black wire (labeled "26") into the circular "26" slot on the side of the terminal strip.

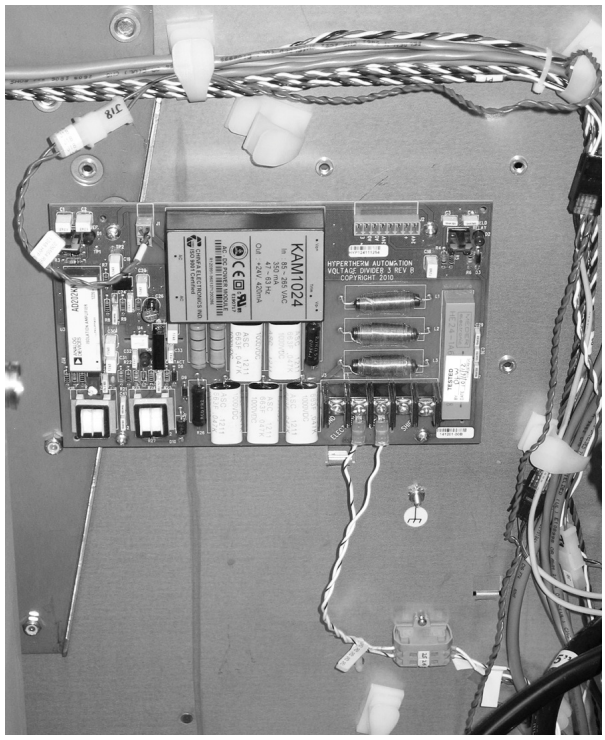
c. Remove the screwdriver to release the contact, and verify that the wire is now held securely in place.

Figure 6 – Connecting the arc voltage wires to the terminal strip



10. Verify that both wire groups are properly connected in the power supply, as shown in Figure 7. Also check to make sure that all of the wire connections are secure.

Figure 7 – The Sensor THC PCB installed in the power supply

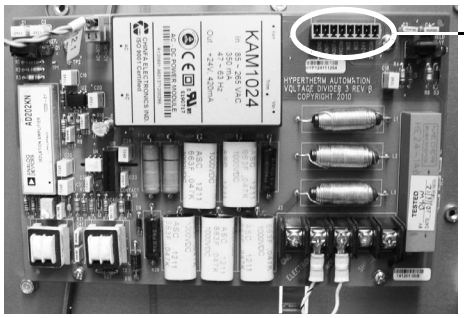


11. Use the screws you removed in Step 5 to secure the right-side panel back in place.

12. Turn ON the power to the power supply.

The Sensor THC PCB contains an 8-pin interface connection slot that can be used to connect to the CNC. However, this document does not include instructions on how to connect the MAXPRO200 to your CNC. Refer to your CNC's documentation for details on how to properly set up this connection.

Figure 8 – The CNC connection slot on the Sensor THC PCB



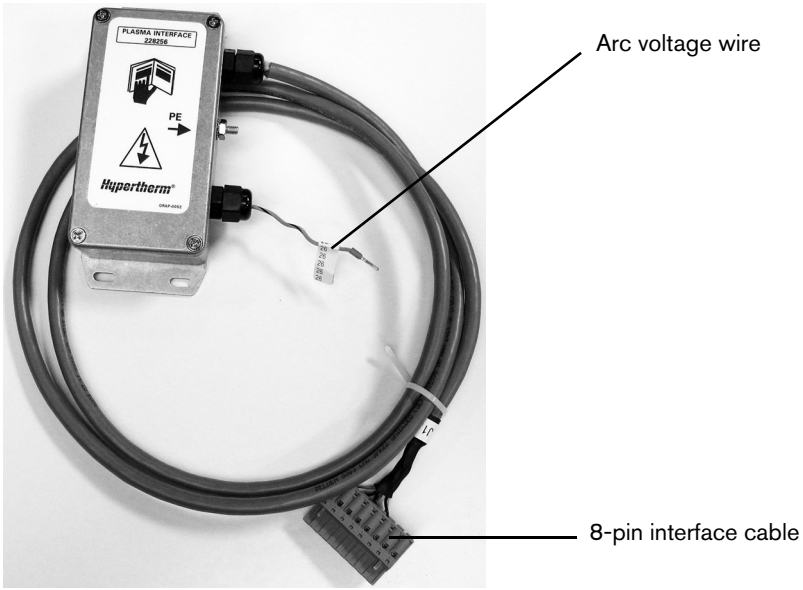
Install the plasma interface connection kit for the Sensor PHC and Sensor Ti THC

The Sensor PHC and Sensor Ti THC use the same plasma interface connection kit. This kit is designed to serve as a voltage divider that lowers the voltage so it can be used to transfer a signal to the height control system.

Installing the plasma interface connection kit (228256) in the MAXPRO200 involves:

1. Mounting the plasma interface assembly to the center panel in the power supply.
2. Connecting one wire and one cable from the plasma interface assembly to the power supply. (See Figure 9.)
   - The 8-pin interface cable provides a connection to the control board.
   - The arc voltage wire provides a connection to the I/O board.
3. Ensuring the plasma interface is properly grounded.

Figure 9 – The plasma interface assembly



1. Turn OFF the power to the power supply.
2. Use a 3/8 inch wrench to remove the right-side panel from the power supply.
3. Remove the screws from the four standoffs near the middle of the center panel. (See Figure 10.)

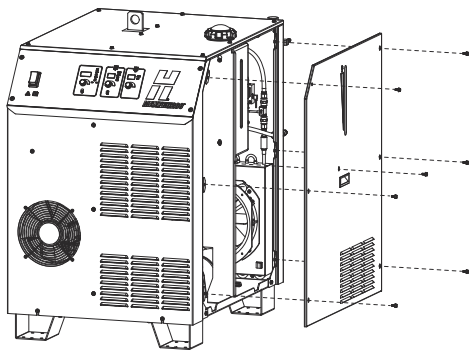
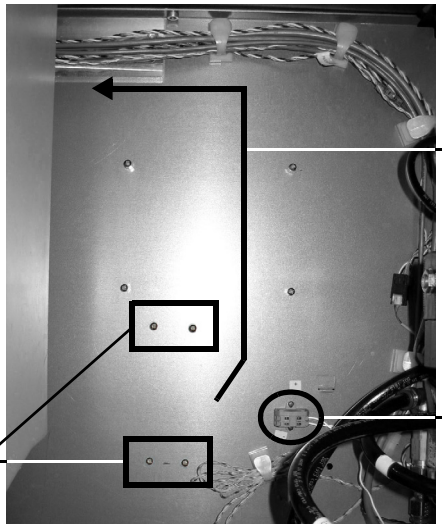


Figure 10 – The standoffs on the center panel in the power supply



4. Mount the plasma interface assembly (228256) to the center panel. Line up the slots at the top and bottom of the assembly with the four standoffs, then secure the assembly to the standoffs using the screws you removed in the previous step.

   Be sure to install the plasma interface assembly right-side up, with the arc voltage wire and interface cable extending from the right side of the assembly. (See Figure 9 on page 8.)

5. Connect the interface cable to the control board:

   a. Feed the cable through the slot at the top of the center panel, as shown in Figure 11.

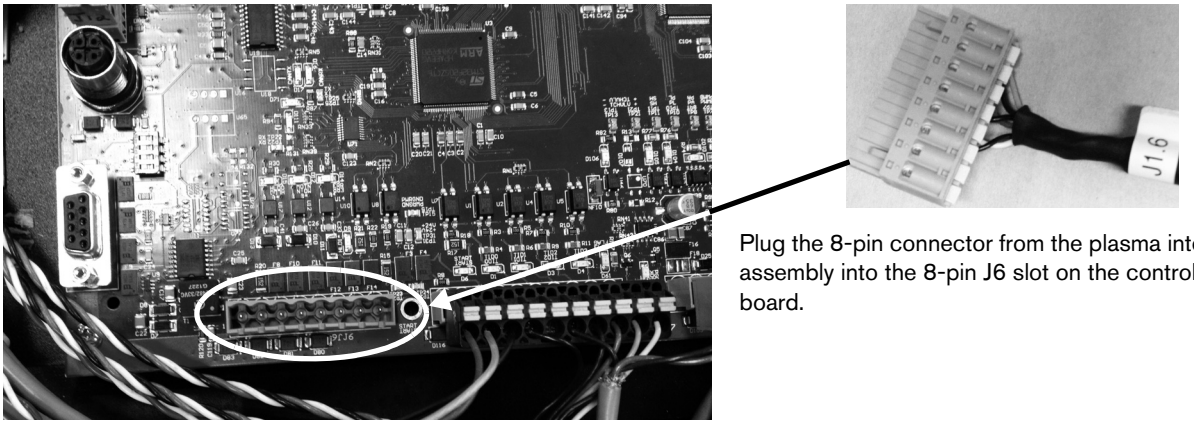
   Bundle the interface cable with the other wires along the top of the center panel by securing it in the clips. (See Figure 10 and Figure 11.)

   b. Plug the cable's 8-pin connector into the 8-pin connection slot on the control board labeled J6. (See Figure 12.)

Figure 11 – Routing the interface cable along the center panel to the control board



Figure 12 – Connecting the interface cable to the control board at J6

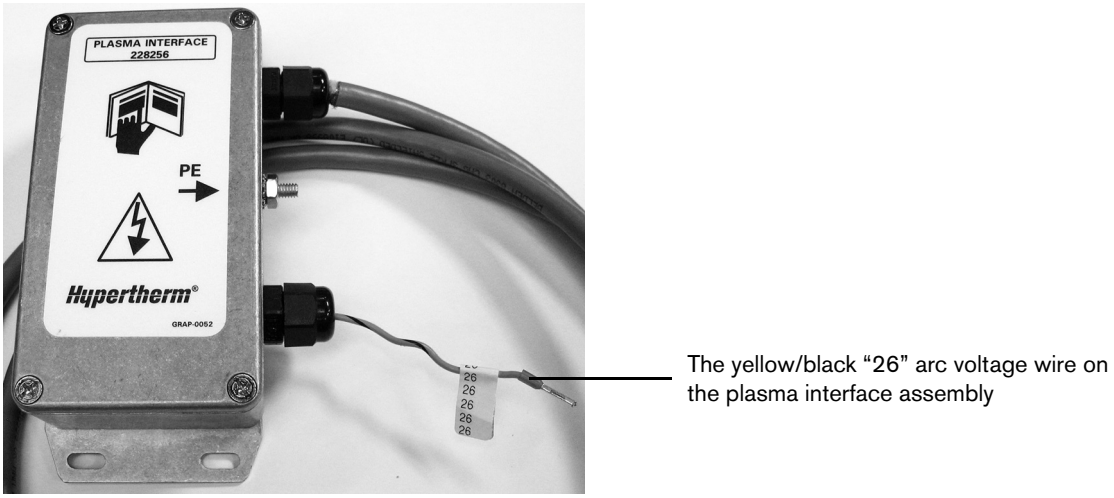


If you have trouble accessing the connection slot on the control board, you can open the control panel on the front of the power supply by removing the four screws from the corners of the panel.

6. Connect the yellow/black arc voltage wire from the plasma interface assembly (see Figure 13) to the left side of the gray terminal strip mounted on the center panel (see Figure 10 on page 9).

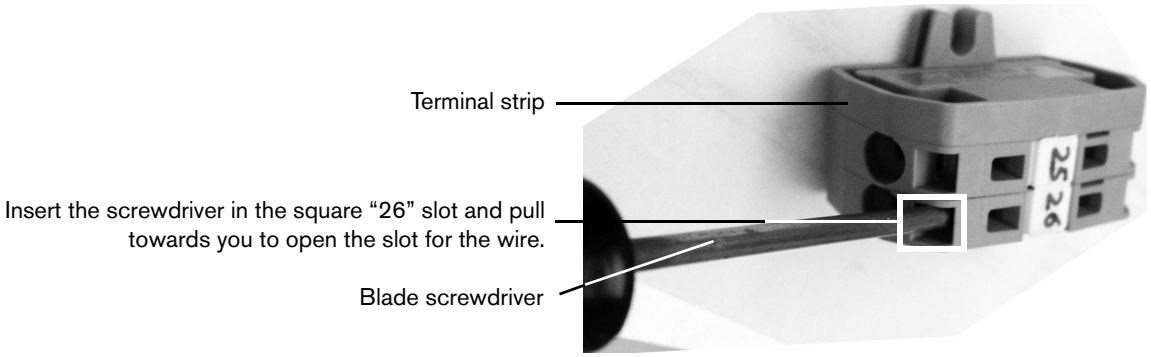
The arc voltage wire must be inserted into the correct slot in the terminal strip to ensure matching polarity. The yellow/black “26” wire has negative (-) polarity.

Figure 13 – Arc voltage wire on the plasma interface assembly



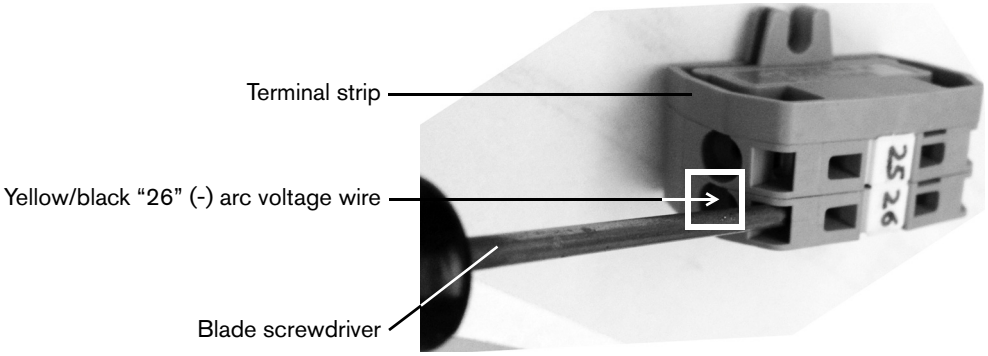
a. To secure the wire in the terminal strip, first insert a small blade screwdriver in the square opening on the side of the terminal strip that is labeled "26," as shown in Figure 14. Pull the screwdriver towards you to open the contact in the circular slot below it.

Figure 14 – Opening the contact in the terminal strip



b. Insert the yellow/black arc voltage wire (labeled "26") into the circular "26" slot on the side of the terminal strip. (See Figure 15.)

Figure 15 – Connecting the arc voltage wire to the terminal strip

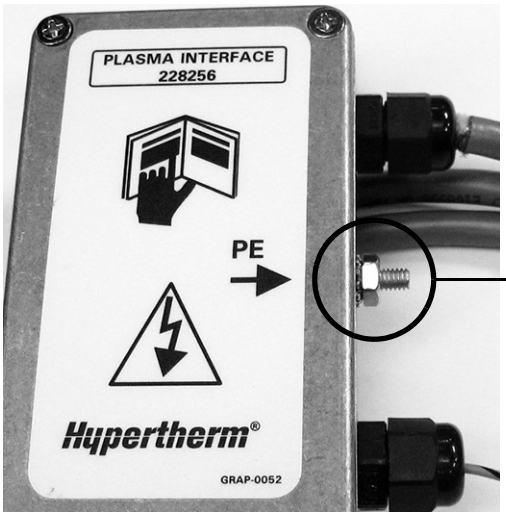


c. Remove the screwdriver to release the contact. Verify that the wire is now held securely in place.

No wire is connected to the circular "25" slot on the terminal strip.

7. Run a ground wire from the PE connector on the plasma interface assembly to the star ground on the cutting table. (See Figure 16.)

Figure 16 – PE connection for ground wire to cutting table



	CAUTION!
	Prevent damage to system wires caused by overheating from a current loop. **Do not connect the plasma interface assembly PE ground to either the circular "25" slot on the terminal strip or to J9 (WORK) on the I/O board within the power supply.**

8. Put the control panel back into place on the front of the power supply, if you opened it.

9. Use the screws you removed in Step 2 to secure the right-side panel back in place.

10. Turn ON the power to the power supply.

The plasma interface assembly contains a DB-15 connector on the top of the assembly that can be used to connect to the computer numerical control (CNC) system. However, this document does not include instructions on how to connect the MAXPRO200 to your CNC. Refer to your CNC's documentation for details on how to set up this connection.