

Table 6 – Input power requirements

Part number	Input voltage (VAC)	Phase	Rated input current at 35.7 kW output (A)	Recommended time-delay fuse size (A)	Recommended size for the main power cord 90°C (194°F) (mm ² [AWG*])	Power (kVA)
078640	200	3	117	150	70.5 (1/0)	40.48
078641	208		112	150	70.5 (1/0)	
078642	220		106	150	70.5 (1/0)	
078643	240		97	125	43.2 (2)	
078644	380		62	80	27.3 (4)	
078645	400		59	80	27.3 (4)	
078646	415		56	70	17.2 (6)	
078647	440		53	70	17.2 (6)	
078648	480		49	65	17.2 (6)	
078649	600		39	50	10.8 (8)	

* AWG requirements must comply with the latest version of the US National Electric Code (in North America) or the latest electric wiring and installation requirements (based on the codes in your location). *Table 6* is for reference only; the requirements for your location can be different. Follow all local and national electrical codes in your location.



The strain relief for the input power cord that comes with the plasma power supply is sized properly (see *Table 6*). Contact a licensed electrician to make sure that your main power cord size and length meet the codes in your location.

Plasma power supply

As an installer or user, you must connect the plasma power supply to one of the branch-feed circuits. Use a separate, primary line-disconnect switch for the plasma power supply. (See *Line-disconnect switch requirements* on page 39.)

Always follow the local and national electrical safety requirements for your location, including requirements for correct electrical system design and installation. Contact a licensed electrician for more information about the codes in your location.

Line-disconnect switch requirements

As an installer or user, you must supply a separate, line-disconnect switch for the plasma power supply. A means for disconnecting the cutting system shall be provided according to the installation, safety, and emergency requirements for the local codes and regulations, taking into account the input power requirements. Hypertherm does not supply this means of disconnection.

Circuit breaker and fuse requirements

For main feed protection, choose a circuit breaker or fuse that is large enough to withstand all branch-feed loads for both inrush and steady-state current. See *Table 6* on page 39 for the recommended time-delay fuse sizes.

As an installer or user, you must choose time-delay fuses and circuit breakers that can withstand inrush current that is up to 30 times the rated input current for 0.01 seconds and up to 12 times the rated input current for 0.1 seconds.

The size requirements for breakers or fuses at your site can change because of the following:

- Local line conditions (such as source and line impedance and voltage fluctuations)
- Product inrush characteristics
- Regulatory requirements

Always follow the local and national electrical safety requirements for your location, including requirements for correct electrical system design and installation. Contact a licensed electrician for more information about the codes in your location.



If time-delay, high-inrush fuses are not permitted at your site because of national or local codes, use a motor-start circuit breaker or equivalent.

Main power cord requirements

As an installer or user, you must supply the main power cord for your cutting system. See *Table 6* on page 39 for recommended main power cord size.

The recommended main power cord sizes in *Table 6* are based on Table 310.15 of the US National Electric Code (2017 Handbook). *Table 6* shows stranded-flexible cord rates for 90°C (194°F). The size requirement for the main power cord at your site can change because of the following conditions:

- Wires with lower temperature ratings
- Wires with different insulation types
- Different distances between the line-disconnect switch/receptacle and the plasma power supply
- Local codes and regulations

Always follow the local and national electrical safety requirements for your location, including requirements for correct electrical system design and installation. Contact a licensed electrician for more information about the codes in your location.

Input power requirements for CE units

The XPR cutting system complies with IEC 6100-3-11 and IEC 61000-3-12, provided that the short-circuit power (Ssc) between the supply and the public system for the installation site is greater than (or equal to) 6.79 MVA. The installer or user is responsible for verifying that the short-circuit power (Ssc) for the installation site satisfies this requirement.



If necessary, you can consult with the distribution network operator for your site to verify the short-circuit power Ssc for your site.

The XPR cutting system is intended for use only in sites that have a service current capacity that is greater than (or equal to) 100 A per phase and supplied from a distribution network that has a nominal voltage of 400/230 V. The installer or user is responsible for verifying that the service current capacity for the installation site satisfies this requirement.

Remote on-off switch

WARNING



ELECTRIC SHOCK CAN KILL

When the remote on-off switch is set to OFF, power remains active to the following components in the system:

- Control board
- Control transformer input and output
- 48 V power supply
- 24 V power supply
- 120 VAC and 220 VAC on the power distribution board
- Input side of the contactors
- Input side of the pump relay
- Power-indicator LED on the front of the plasma power supply

All work requiring removal of the plasma power supply outer cover or panels must be done by a qualified technician.

See the *Safety and Compliance Manual (80669C)* for more safety precautions.

You must supply the remote on-off switch (or switches) for your cutting system.

A remote on-off switch lets you supply electric power to or remove electric power from the gas connect console, torch connect console, and some parts of the plasma power supply from a location that is remote from the main power source. A convenient location for a remote on-off switch is near the CNC.



For information about how to do this, see *How to install a remote on-off switch* on page 195.