

1st Calculate the Maximum Current Draw of the Spot Welder

Single Phase A.C. (typical)

$$\frac{\text{KVA}}{\text{Primary Voltage} \times 1.41} \times 1000 = \text{Max. Current Draw}$$

Example $\frac{75 \text{ KVA}}{440 \text{ VAC} \times 1.41} \times 1000 = 120 \text{ Ampere}$

Three-Phase Frequency Converter (typical)

$$\left(\frac{\text{KVA}}{\text{Primary Voltage} \times 1.41} \right) \times .81 \times 1000 = \text{Max. Current Draw}$$

Example $\left(\frac{200 \text{ KVA}}{440 \text{ VAC} \times 1.41} \right) \times .81 \times 1000 = 260 \text{ Ampere}$

Mid Frequency Inverter D.C. (typical)

$$\left(\frac{\text{KVA}}{650 \times 1.41} \right) \times .81 \times 1000 = \text{Max. Service Req'd}$$

Example $\left(\frac{250 \text{ KVA}}{650 \times 1.41} \right) \times .81 \times 1000 = 270 \text{ Ampere}$

2nd Size the Switchgear, Line Fuses, and Conductors to [NEC](#) Guidelines

RECOMMENDED PRIMARY CABLE SIZE USING WELDING CABLE

Amps	TOTAL LENGTH OF COPPER CABLE IN PRIMARY CIRCUIT					
	50 ft.	100 ft.	150 ft.	200 ft.	250 ft.	300 ft.
100	4	2	2	2	2	1
150	2	2	2	1	1/0	2/0
200	1	1	1	1/0	2/0	3/0
250	1/0	1/0	1/0	2/0	3/0	4/0
300	2/0	2/0	2/0	3/0	4/0	4/0
350	3/0	3/0	3/0	4/0	4/0	
400	3/0	3/0	3/0	4/0		
500	4/0	4/0	4/0			