



Ejectors



What is a SCCR Rating?

Congested commercial building areas are supported by underground low voltage network systems to allow multiple building connections. Fault currents are reduced by utilities KVA transformers capability and impedance in the power distribution system. However the maximum fault currents provided by the branch circuits can present a safety hazard, and should be considered when specifying power supply circuits to **motor driven equipment**, heaters, lighting, appliances and receptacles. UL 508A – Standard for Safety for Industrial Code and the National Electrical Code require industrial control panels that contain power circuits which provide power to motors be marked with an Short Circuit Current Rating (SCCR) also known as a “withstand” rating.

The SCCR rating indicates the highest short circuit current that power circuit can safely withstand without causing a fire or shock hazard. Exceeding the rating can cause **dangerous equipment component and enclosure failures**. UL 508A provides guidance on assumed SCCR ratings for unmarked components. A motor controller rated to support up to a 50 HP motor is assumed to offer an SCCR rating of 5KA unless otherwise specified.

Manufacturers offer optional high SCCR rated panels to protect the panel components and equipment and avoid catastrophic failure in the event of a high fault current.

High SCCR Rated Control Panels

Panel manufacturers are able to provide high SCCR ratings by incorporating additional disconnects and high amperage fuses to protect the panel and the motor power supply circuits. Figure 2 provides a typical layout of a high SCCR panel layout. In the upper right hand corner are two high amperage disconnects which contain six high amperage fuses to provide 65KA SCCR protection. The size of these disconnects requires in many cases for a larger panel enclosure to be used. The additional disconnects, larger panel and fuses adds additional cost to the control panel. Specifiers must consider if this additional cost is warranted based on the maximum fault current possible at the control panel.

Extracted from UL 508A Table SB4.1	
Assumed maximum short circuit current rating for unmarked components	
Component	SCCR,KA
Bus Bars	10
Circuit Breakers	5
Current Meters	*
Fuseholder	10
Industrial control equipment	
a. Auxiliary devices (overload relay)	5
b. Switches (Other than mercury)	5
c. Mercury tube switches	
- Rated over 60 amps or over 250 Volts	5
- Rated less than 60 amps or less than 250 Volts or over 2 KVA	3.5
- Rated less than 2 KVA or less than 250 Volts	1
Motor Controller, rated in HP	
a. 0-50	5
b. 51-200	10
c. 201-400	18
d. 401-600	30
e. 601-900	42
f. 901-1500	85
Meter socket base	10
Miniature or miscellaneous fuse	10
Receptacle (GFCI type)	2
Receptacle (other than GFCI type)	10
Supplementary Protector	0.2
Switch Unit	5
Terminal block or power distribution block	10

Figure 1 – UL 508A assumed maximum SCCR if unmarked by component type

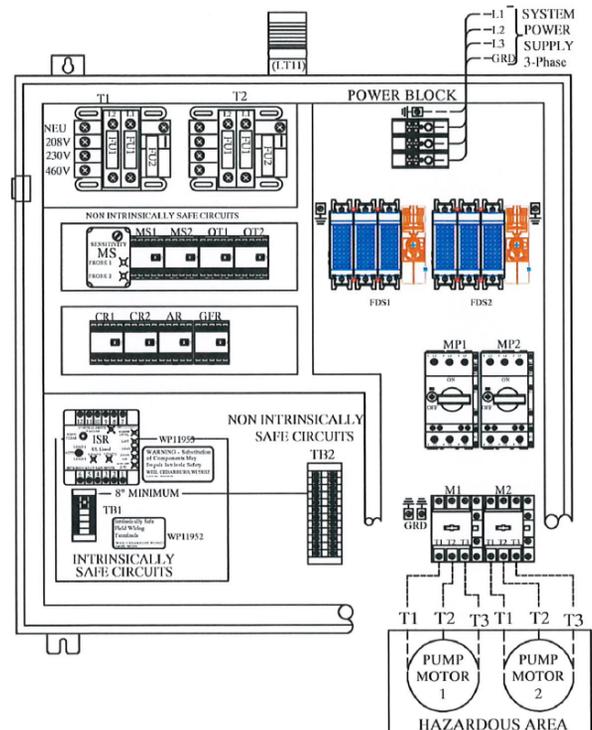


Figure 2 – 65K SCCR Control Panel Layout