Heat Flux Calculator Instructions

created by Alan Privette

The Heat Flux Calculator is a free software program created by Alan Privette and is made available to the general public for the purpose of calculating heat flux received at a surface
some distance from an electric arc.

Please Note:The use of this program is the responsibility of the user. Brenco makes no warranty to the accuracy of the results and accepts no responsibility for any damage that may arise from its use. Each application is unique. If in doubt to the parameters of your particular situation, discuss the specific conditions with your electrical safety officer or refer to an electrical safety consultant for professional assistance.

To use the heat flux calculator, you will be prompted for the following information:

1.The arc current in Amps.
2.The arc gap in Inches
3.The supply voltage
4.The distance from the arc to the receiving surface
5.The duration of the arc in number of cycles

Note:

1.The arc current is the maximum amount of current available that will create the arc during a fault condition.
This is a factor of the size of the transformer that supplies power to the location of the fault.
2.The arc gap is the distance that the current of the arc will flow through the air between phases or between phase to ground. This could be the distance between bus bars or from a bus bar to ground.
3.The supply voltage entered must be in volts. I.e. 7500, not 7.5kA
The calculator will advise if the supply voltage is insufficient to sustain an arc. In this case, a smaller gap distance may be entered to allow the calculator to determine a value. If this is desired, the calculator will need to be reset and the information re-entered.
4.The distance from the arc to the receiving surface in inches is the distance from the arc to the worker performing the task that created the arc condition. The closer to the arc, the greater the amount of energy the worker will be exposed to.
5.The number of cycles for the arc duration is the amount of time the arc will be present. This will depend on the clearing time of the fuse or breaker associated with the circuit. Contact the manufacturer or the installer for the clearing time of the circuit interrupting equipment.
At this point the total calories per square centimeter at the receiving surface will be displayed.