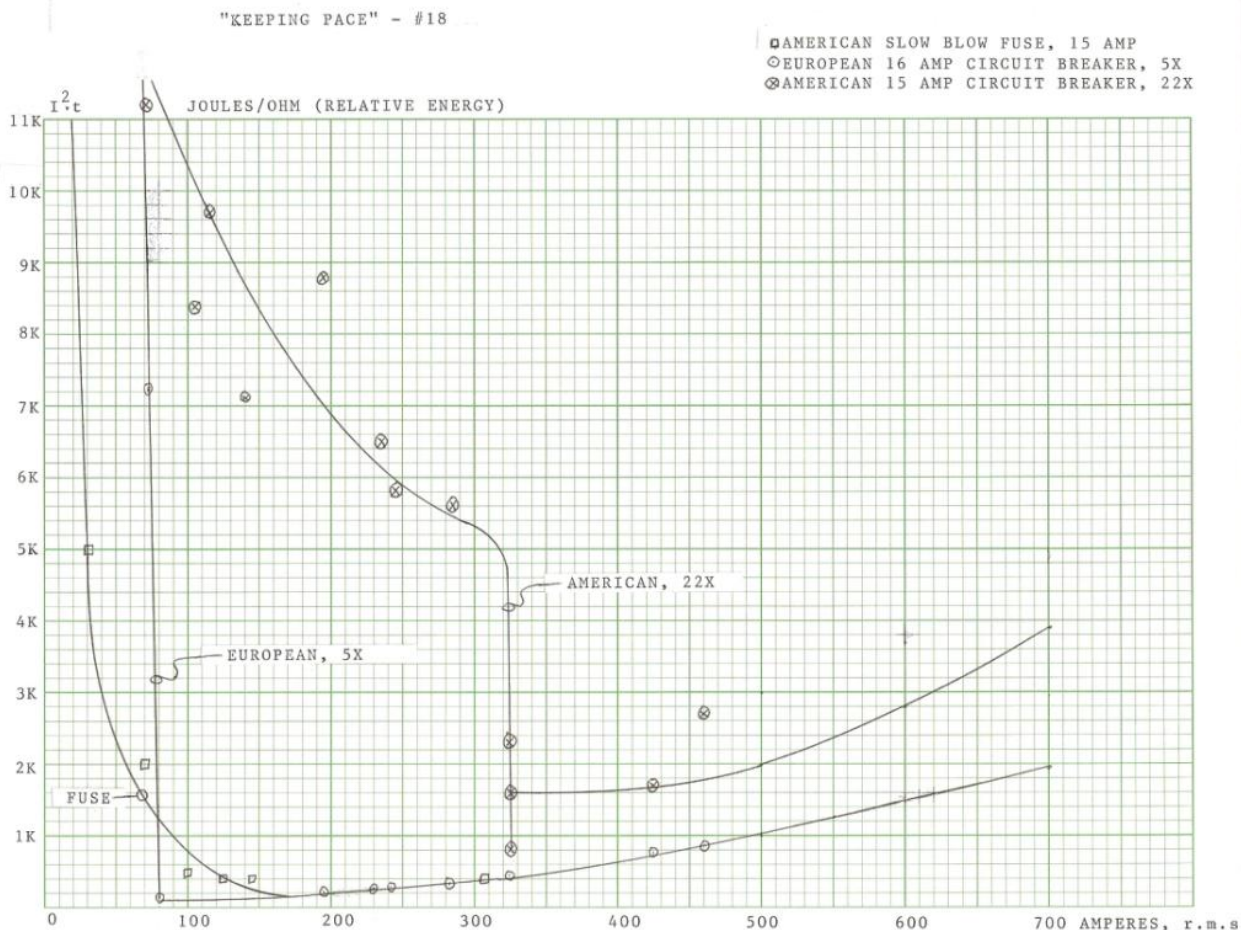


"KEEPING PACE" - #18

(REVISED)



FUSES VS. CIRCUIT BREAKERS:

Most short circuit arcs in 15 and 20 ampere household circuits draw between 100 and 400 amperes of electrical current. The above graph was drawn to illustrate the differences in relative energies per ohm, or I^2t , for a 15 ampere fuse, a 5X European style circuit breaker, and a 22X American circuit breaker. I^2t is the relative energy (per ohm) allowed into an arc before the device opens the circuit (pops or trips.) As you can see, a 15 ampere household fuse is very good protection against a short circuit arcing fire. [It is even better than the later developed Arcing Fault Circuit Interrupter (AFCI).] 20 ampere household fuses are also good protection, but 30 ampere fuses are not.

Sincerely,

Frederick F. Franklin, P.E.
Forensic Engineer