



All Surge/Hipot/Resistance testers: ST103/203, ST106/206, ST112/212, ST115/215, MT165/265, ST124/224, D6000/12000, DS206/212, D6R/D12R, D15000/D165, DS215/DS265, D24000, PP30D, D30000, D185/285, AWA series 2 and 3

Question: What is the repetition rate/pulse rate for my surge tester. In other words: How many surges am I going to apply when I do a test?

Answer: Baker surge testers apply pulses at different rates according to their designs:

Analog designs: ST103/106/112, anything with "ST" or "MT" in the product name

Digital designs: D6/12R, D6000/12000, anything with "D" in the product name

Computer controlled: Advanced Winding Analyzer

Analog designs:

Baker ST103/203/106/206/112/212 A, S, R, E: Apply pulses at AC mains frequency: (60 Hz. In the U.S. A. 50 Hz in many countries) For the U.S.A. this means the tester will apply 60 pulses per second when the test is in progress. A reasonable time required to do a 1960 Volt surge test on a three phase 480VAC motor would be about 5 -10 seconds per phase. This means a test sequence would apply roughly 600- 1800 pulses. This would be the time to initiate the test, raise the output voltage, observe the resulting waveforms for stability, and end the test.

Baker ST115/215/124/224/MT165/265/174/274 A, S, R, E: Apply pulses at $\frac{1}{2}$ AC mains frequency) This means 30 pulses per second when a test is in progress. The test guidelines and duration for the ST103/106/112 apply.

Digital designs:

D6R/D12R/D15R/D65R/D6000/DS206/D12000/DS212/D15000/DS215/D165/D24000/PP30D/D30000/DS230:

All of these testers apply pulses at a rate of 5 pulses per second. (5 Hz) They are independent of AC mains frequency by design. From our example above, if a 1960 Volt surge test is desired on a three phase motor, and the operator takes roughly 10 seconds to apply the test to each phase, a total of about 150 surges would be applied.

Advanced Winding Analyzer: AWA series 2 and 3

This test set applies pulses at the same 5 pulses per second rate as the Digital designs: However: It is designed to perform pre-programmed tests automatically, without operator interpretation. It may be helpful to think of this tester as being able to apply "volts per second" To apply the 1960 Volt example test, the AWA (at factory default setting) will raise the potential at 5 pulses per second, each pulse being 25 volts greater than the previous pulse.

This means the desired voltage (1960 Volts) will be reached in 25 volt increments. It will take 78 steps to reach the target voltage ($25 \times 78.4 = 1960$ Volts) each step will take 2 seconds. So the test time to apply 1960 Volts at the factory default setting will be 15.68 seconds. (Per motor phase) Of course, since the AWA is programmable, faster or slower times can be configured.