

# AN506: General

## Application Note: ANSI/IEEE C37.90.1-1989 Transient Specification

Industrial equipment located in the "field" is exposed to electrical noise, power surges, and transient events such as static discharge or lightning strikes. One of the functions of the Dataforth line of signal conditioning products is the protection of control room equipment from these hazardous conditions which exist in the field.

All Dataforth products are designed with the field inputs or field outputs protected against transient events as defined by the ANSI/IEEE specification C37.90.1-1989 (formerly IEEE-472). The typical open circuit Surge Withstand Capability (SWC) test wave forms as defined by the ANSI/IEEE specification are shown below in Figures 1 and 2. Repetition rate for the test wave forms is at least 50 tests per second with a total test duration of at least 2 seconds.

Application of these wave forms to the signal conditioners will render the measurement useless while they are applied. The wave form energy will be dissipated within the signal conditioner and neither the signal conditioner nor the control room equipment will be damaged.

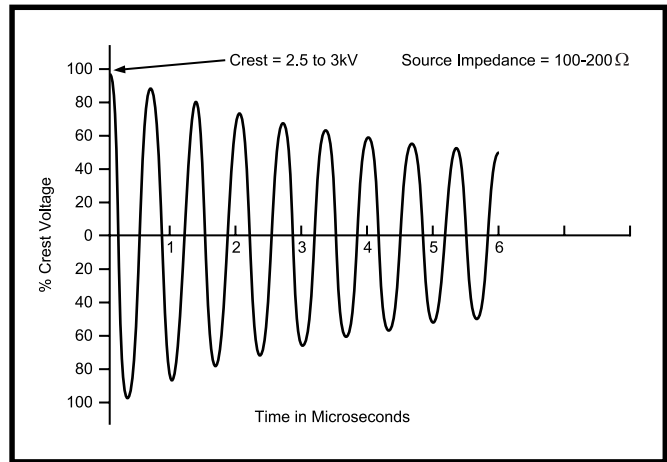


Figure 1: Typical Oscillatory SWC Test Wave (Open Circuit)

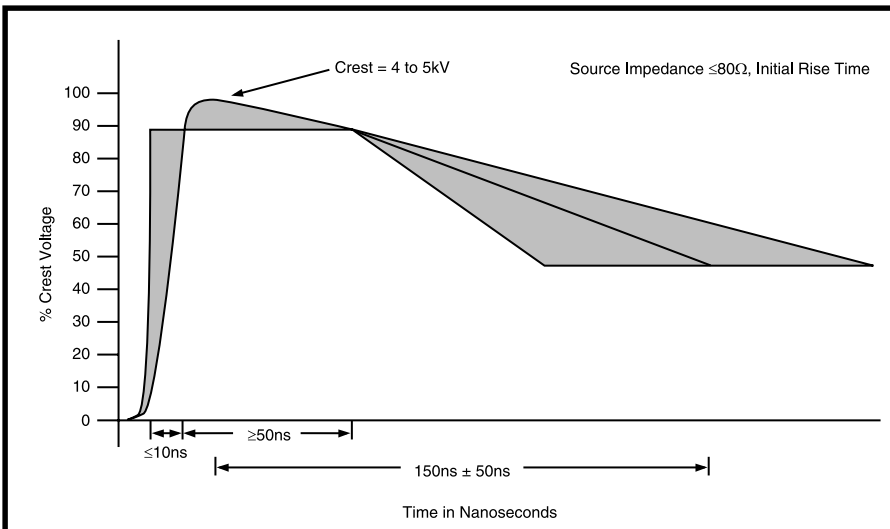


Figure 2: Typical Fast Transient SWC Test Wave (Open Circuit)