



# NSG 5071 INDUCTIVE SWITCH TRANSIENT TEST CIRCUIT



- **Designed in accordance to Ford standard EMC-CS-2009**
- **Transients disturbances CI 220 A and C pulses**
- **CI 260 waveform F**
- **User replaceable relays**
- **Timer to track relay usage**
- **Up to 30 A DUT current**

The NSG 5071 is designed exactly in accordance with EMC-CS-2009.1 for test CI 220 pulses A1, A2-1, A2-2, C1, C2 and RI 130 using an inductive/relay transient generator test circuit. The NSG 5071 also features the CI 260 Waveform F in this test circuit which uses the same type of relay. This test circuit is defined in annex F for the A, C pulses and RI 130 and figure 19-10 for CI 260 Waveform F.

The basic philosophy of this test circuit is better reproducibility of actual switching transients. The reproducibility of this test circuit comes not from the output characteristics as in traditional conducted automotive immunity tests, but from a fixed design of the generator using several pre-defined components. Many of these components are defined in the standard as "critical" with no substitutions allowed. These components are used as required in the standard.

The test circuit is based primarily around a Potter and Brumfield relay and two inductors from Osborne Transformer. The relay is used in three ways: to switch the voltage off to inductors thus causing large inductive kickback transients, to self-chatter, and in the case of Waveform F, to act as a randomized dropout test.

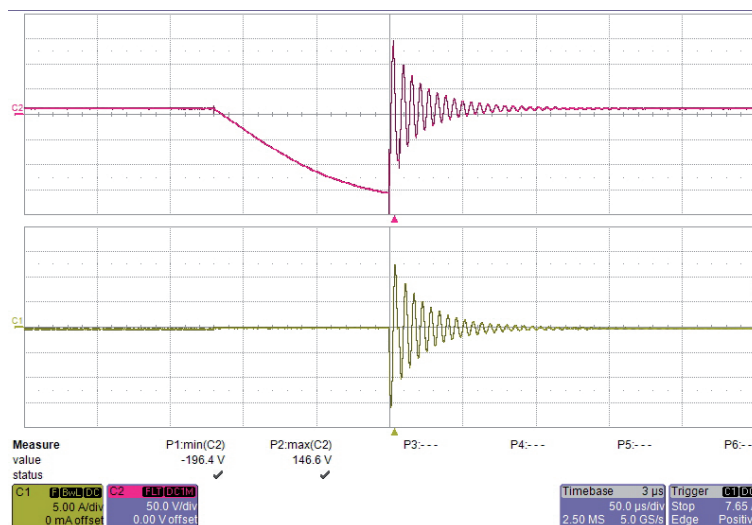
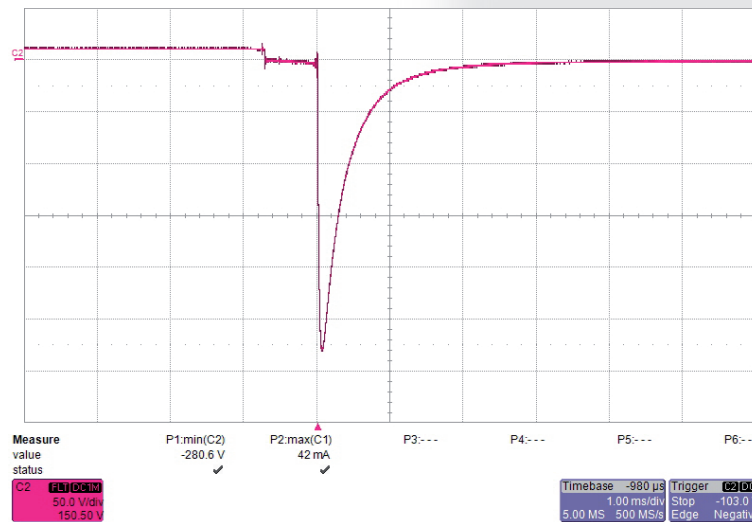
The NSG 5071 is a convenient way of using the required components in the different required configurations in the standard to provide a single output to the EUT and maximize ease-of-use.

## Technical specifications

Critical components used: (as defined by the standard)	Potter and Brumfield KUP-14A15-12 5 $\mu$ H Osborn Transformer PN 8745 100 mH Osborn Transformer PN 32416
DC current ( $I_{max}$ ):	10 A with supplied relay Up to 30 A with user-installed relay
DC voltage ( $U_{max}$ ):	15 V

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Example pulses:



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