

## Australian Standard®

# Automatic fire detection and alarm systems—Methods of test for actuating devices

## Method 6: Static discharge test

**1 SCOPE.** This Standard sets out the method of testing the ability of the actuating device to withstand static discharges of short duration and relatively high peak values. (See performance requirements in the appropriate device Standard.)

**2 PRINCIPLE.** A number of high voltage discharges are applied to different points on the actuating device, following which actuating device operation is evaluated.

**3 APPARATUS.** A suitable test circuit capable of meeting the requirements of Clause 4 is required.

NOTE: The power supply should have appropriate protective devices.

**4 TEST CIRCUIT PREPARATION.** The test circuit shall be prepared as follows:

- A 250 pF low leakage capacitor, rated 10 kV d.c, is connected to two high voltage insulated leads, 0.9 m long.
- A 1500  $\Omega$  resistor is inserted in series with one lead.
- The end of each lead is attached to a nominal 12.5 mm diameter metal test probe with a spherical end mounted on an insulating rod.

**5 PROCEDURE.** The procedure shall be as follows:

- Mount the actuating device in its intended orientation on a 300 mm square earthed metal plate and connect to appropriate power supply and indicating equipment.
- Conduct the test at a temperature of  $23 \pm 2^\circ\text{C}$ , a relative humidity of  $50 \pm 5\%$ .
- Charge the capacitor immediately prior to each discharge by touching the ends of the test leads to a source of 10 kV d.c. for not less than 2 s, for each discharge.
- Discharge the test circuit to an exposed surface of the actuating device. To obtain discharge, one probe is touched to the earthed plate and the other probe is then touched to the actuating device.
- Check if the actuating device has entered an alarm state.
- Repeat Items (c), (d) and (e) for a total of ten discharges applied to different points on the exposed surface of the actuating device, recharging the capacitors for each discharge. Five discharges are to be made with one lead connected to earth and the other lead placed on the actuating device surface, followed by five discharges with the polarity reversed.

For actuating devices intended to be serviced by the consumer, ten additional discharges shall be applied as described above, except that each lead shall be placed in turn, on all internal parts which would normally be contacted by the user.

**6 REPORTING OF RESULTS.** The following shall be reported:

- Information identifying the actuating device.
- Whether the actuating device entered an alarm state during the test.
- Reference to this test method.

