Australian Standard™

AS 2362.15

Fire detection, warning, control and intercom systems—Methods of test

Method 15: Vibration test

1 SCOPE

This Standard sets out the method for subjecting an actuating device to vibration. (See subsequent performance requirements in the appropriate device Standard.)

2 PRINCIPLE

An actuating device is subjected to a range of sinusoidal vibrations at specified frequencies and monitored for alarm or fault state.

3 APPARATUS

The apparatus shall be a suitable, sinusoidal vibration machine capable of a total displacement (amplitude) of 3.2 mm peak to peak at 5 Hz and a peak acceleration of 5.5 m/s^2 at 60 Hz and capable of being varied in frequency between 5 Hz and 60 Hz.

4 PROCEDURE

The procedure shall be as follows:

(a) Attach the actuating device, in its normal orientation, to a suitable vibration table using the fittings provided by the manufacturer (screws, etc), and connect the leads to a power supply and monitoring equipment.

(b) Energize the actuating device and subject it to continuous vibration by sweeping, or stepping the frequency in no less than eight steps, from 5 Hz through to 60 Hz, increasing the frequency of vibration at an average rate of two octaves per hour, and controlling the peak acceleration (a_v) to satisfy the following relationship.

The peak value of vibration acceleration (a_v) is calculated from the following equation in metres per second squared:

$$a_v = 0.7\sqrt{f}$$

where

f = vibration frequency (Hertz)

NOTE: Vibration acceleration in gravity units (G_v) is calculated from the following equation:

$$G_v = \frac{a_v}{g}$$

where

g = acceleration due to gravity (9.81 m/s^2)