THE VMC GROUP
The Power of Together™

CERTIFICATE OF COMPLIANCE

Fire-Lite® Alarms by Honeywell

SEISMIC CERTIFICATION OF NON-STRUCTURAL ELECTRICAL COMPONENTS AND SYSTEMS

Fire-Lite Alarms by Honeywell has CERTIFIED[1] the listed Fire Alarm System Products for seismic application. The basis of qualification was by shake testing and analysis, in accordance with the following building codes[2].

IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007

Honeywell Brand	Model	Cabinet Style
Fire-Lite	ACC-25/50ZS Control Panel	05240
Fire-Lite	ACC-25/50 Control Panel	05240
Fire-Lite	ACC-25/50DAZS Control Panel	05240
Fire-Lite	ACC-25/50DA Control Panel	05240
Fire-Lite	ACC-25/50ZST Control Panel	05240
Fire-Lite	MS-9200UDLS Addressable Fire Alarm Control Panel	05258
Fire-Lite	MS-9050UD Addressable Fire Alarm Control Panel	05258
Fire-Lite	MS-9600UDLS Addressable Fire Alarm Control Panel	05258
Fire-Lite	MS-9600LS Addressable Fire Alarm Control Panel	05258
Fire-Lite	MRP-2002 Agent Releasing Panel	05258
Fire-Lite	MRP-2001 Agent Releasing Panel	05258
Fire-Lite	MS-10UD-7 Fire Alarm Control Panel	05258
Fire-Lite	MS-5UD-3 Fire Alarm Control Panel	05258
Fire-Lite	HPFF12 Power Supply Panel	05258
Fire-Lite	HPFF8 Power Supply Panel	05258
Fire-Lite	FCPS-24FS8 Power Supply Panel	05209
Fire-Lite	FCPS-24FS6 Power Supply Panel	05209
Fire-Lite	MS-4 Fire Alarm Control Panel	05209
Fire-Lite	MS-2 Fire Alarm Control Panel	05209
Fire-Lite	411UDAC	05202
Fire-Lite	ROME Relay Panel	05209
Fire-Lite	BB-26 Back-Up Battery Box	05215
Fire-Lite	BB-17 Back-Up Battery Box	05134

A complete list of certified models, options, and installation methods are detailed in report number VMA-45894-01, as issued by The VMC Group.

All listed options MUST be installed per the manufacturer supplied seismic installation instructions. This certification includes the unit, as factory supplied, and installed directly to a wall using the fastening or anchoring method defined in the unit manufacturer's seismic installation instructions. This certification excludes all non-factory supplied accessories and the integrity of the wall or other supporting structure to which the unit is being attached.

The above referenced equipment is APPROVED for seismic application when properly installed[3] and used as intended. Lookup the actual, project specific, Design Spectral Response Acceleration at Short Periods, S_{DS}, value in the table below as it pertains to the applicable building code and compare to the allowed value shown. Below grade, grade, and roof-level installations are permitted by this certification, limited by the S_{DS} values in the table.

The basis of this certification was through successful tri-axis shake testing at internationally recognized Trentec Test Laboratory, under the witness of the Certified Seismic Qualification Agency, The VMC Group. Seismic shake table testing was conducted in accordance with ICC-ES AC-156 to envelope a required response spectrum (RRS) defined by a maximum flexible region acceleration (A_{FLEX}) of 3.09g and a zero period acceleration (A_{RIG}) of 2.32g.

This certification covers all applications that fall below the limitations in the tables below.

CBC 2007
S_{DS} <= 1.93
I_p <= 1.5
z/h <= 1.0 (roof)

IBC 2009 / 2006
S_{DS} <= 1.93
I_p <= 1.5
z/h <= 1.0 (roof)

IBC 2003 / 2000
S_{DS} <= 2.02
I_p <= 1.5
z/h <= 1.0 (roof)

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Notes and Comments:

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156 (2007). The test response spectrum (TRS) enveloped the design response spectrum (DRS) for all units tested. The units cited in this certification were representative samples of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed indoors.

2. The following building codes are addressed under this certification:

   IBC 2009 – referencing ASCE 7-05 and ICC AC-156
   CBC 2007 – referencing ASCE 7-05 and ICC AC-156
   IBC 2006 – referencing ASCE 7-05 and ICC AC-156
   IBC 2003 – referencing ASCE 7-02 and ICC AC-156
   IBC 2000 – referencing ASCE 7-98 and ICC AC-156

3. Refer to the manufacturer supplied installation details for special mounting considerations when installed for seismic application. Structural walls, structural floors, and concrete housekeeping pads must be designed and approved by the building Structural Engineer of Record to withstand the seismic loads imparted by the equipment listed herein. The installing contractor is responsible for observing the installation requirements provided by the unit manufacturer's seismic installation details and the proper installation of all anchors and/or mounting hardware, including coordinating any special inspections required.

4. The Seismic Design Acceleration used for anchor analysis, F_P/W_P, is defined per the building code (or respective design standard) for the section titled Seismic Design Requirements for Non-structural (architectural, mechanical, and electrical) Components. The LRFD calculation and seismic design level is shown below.

CBC 2007	same as IBC 2006	
IBC 2009 / 2006	$F_P/W_P = 0.4 \times (S_{DS}=1.93) \times (I_P=1.5) \times (a_P/R_P=0.42) \times (1+2\,(z/h=1.0))$	= 1.46g
IBC 2003 / 2000	$F_P/W_P = 0.4 \times (S_{DS}=2.02) \times (I_P=1.5) \times (a_P/R_P=0.40) \times (1+2\,(z/h=1.0))$	= 1.46g

When the site soil properties or final equipment installation location are not known, the soil site coefficient, F_A, defaults to the Soil Site Class D coefficient. Soil Classes A, B, C, D, E, Seismic Use groups I, II, III, IV, and Seismic Design Categories A, B, C, D, E, and F are all covered under this certification, limited by the S_{ds} values on page 1, respective to the applicable building code, Importance factor, and z/h ratio. A seismic importance factor, I_p=1.5, applies to this certification to include essential facility requirements and life safety applications for post event functionality.

John P. Giuliano, PE
President, The VMC Group

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