



— MODEL — **X138**

Seismic Sensor Device

The Cla-Val Model X138 shall have an SS1001 Seismic Sensor on-board which meets or exceeds all Standards, Codes and Specification set by the California Division of the State Architect (DSA) Part 12, Title 24 CSC, ANSI Z21-71 and MIL-SPEC 45208A.

The system shall have ARM (reset) and TRIP local status indication and control. The system shall also have provision for remote, customer-supplied status indication and control. The remote control must be accomplished by a momentary dry contact closure for 1 second or less to Arm (reset) the sensor and by a momentary dry contact closure for 1 second or less to Trip the sensor.

The system shall have a SEISMIC SHUTDOWN alarm indicator and dry contact for a customer-supplied remote alarm signal. this alarm indication will denote that two required criteria - a seismic event exceeding the trip point threshold and an in-line pressure change within a preset time limit - have occurred and a seismic valve shutdown is taking place.

The system shall have a local OPERATIONAL SHUTDOWN switch. This function will bypass the seismic sensor and close the appropriate valves. The system shall be provided with an input to accept a signal from customer-supplied dry contact to perform the same function.

The system shall include an internal, 120 volt AC outlet for battery charger, 24 volt DC battery pack with battery charging system and digital voltmeter readout.

Enclosure Specification: Molded with flame-retardant, fiber-glass-reinforced polyester, NEMA 4X, Flammability rating - IP 61 through 65, UL File No. E-64358, Watertight urethane, formed-in-place gasket, Dimensions (exterior): 26" x 26" x10" weight approximately 65lbs.



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The Model X138 Seismic Sensor Device can be retrofitted to existing Cla-Val applications to perform various valve functions once activated. This is available for both hydraulic as well as electronic pilot systems.

Basic Operation:

- A. The system shall activate a 3-way latching solenoid valve which shall in turn activate the control valve.
- B. The system shall input one pressure transmitter.
- C. The Seismic Sensor shall trip at a ground acceleration of .05g to .5g. (set per site specifications and customer request).
- D. The seismic Sensor trip will start an internal timer.
- G. If the pipeline pressure remains constant over the next 2 minutes (field-adjustable), the valve will remain in its present position.
- H. If the pressure drops X PSI (field-adjustable) at any time within the 2 minutes (field-adjustable) following a seismic event, the controller shall send an alarm and close the valve.

I. OPERATIONAL OPTIONS:

The Seismic Monitoring System shall send an alarm signal under the following conditions:

- a. if the pressure drops X PSI (field-adjustable)
- b. battery voltage falls below 25 volts
- c. AC or SOLAR power failure
- d. local and SCADA status of valve position
- e. additional pressure meter inputs for additional control valves

J. EQUIPMENT OPTIONS:

- f. stainless steel enclosure
- g. window door (stainless steel or fiberglass)



X138

UL Approved Cabinet Available as Option



Cla-Val Model X138 Seismic Switch Specifications

1.0 Seismic Switch Design Criteria:

1.1 The Seismic Switch shall have a model SS1001 seismic sensor on board which meets or exceeds all Standards, Codes and Specifications set by the California Division of the State Architect (DSA) Part 12, Title 24 CCR and ANSI Z21.21.

1.2 The Seismic Controller shall be capable of simultaneous control of one or more altitude valve, sending appropriate alarm signals.

1.3 The Seismic Controller shall receive input from one flow or pressure meter which, when combined with a sensor trip input within a present time limit, will signal the valve to close.

1.4 The Seismic Controller shall provide an operator interface to allow field adjustment of time and flow parameters.

1.5 The Seismic Controller shall provide two form-C contacts rated 10A 1/2HP 125/250 VAC, 0.1A 125VDC.

1.6 The Seismic Controller shall provide an internal, 24VDC battery pack with battery charging system and digital voltmeter readout.

1.7 The Seismic Controller shall provide an internal, 120VAC outlet to facilitate installation and removal of battery charger.

1.8 The Seismic Controller shall provide pulsed, "Open-Close" valve operation for one or more altitude valves when used in conjunction with a 3-way latching solenoid valve.

1.9 The Seismic Controller shall employ one high-performance solenoid for reset "ARM" operation, which shall be rated 80W (inrush) and 6W (hold).

1.10 The Seismic Controller shall employ one pulse relay to activate the latching solenoid at the valve.

1.12 The Seismic Controller shall provide for local and remote operation of the System Reset function.

1.13 The Seismic Controller shall provide local (LED) and remote (SCADA) valve position indication ("Full Open/Full Close") for one or more altitude valves (optional).

1.14 The Seismic Controller shall be protected from the environment by a Fiberglass Enclosure that meets NEMA 4X standards (window door optional).

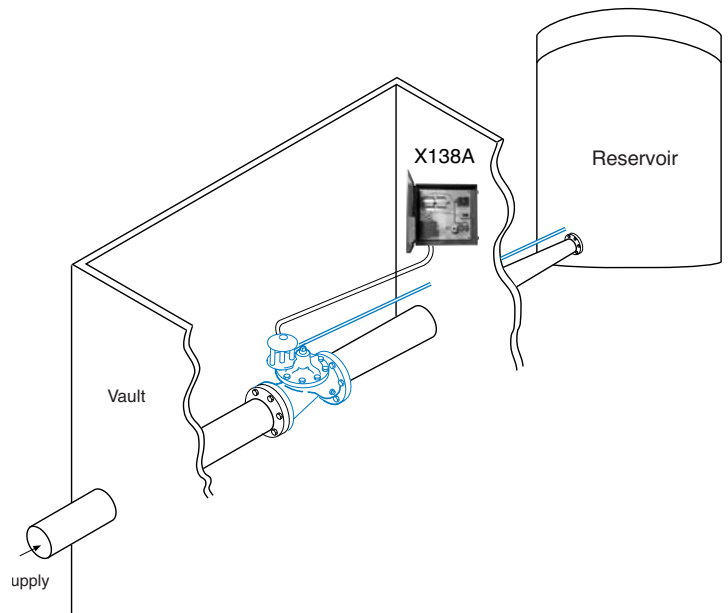
1.15 The Seismic Controller shall operate in a temperature range from -10° F .

1.16 The manufacturer furnishing the Seismic Controller, under the Standards, Codes and Specifications (see above), shall be prepared to show proof that the proposed Seismic Controller meets all requirements.

1.17 The Seismic Controller shall be a Cla-Val Model X133 as manufactured by Cla-Val, P.O. Box 1325, Newport Beach, CA 92659-0325, USA, Phone: (800) 942-6326, Fax: (949) 548-5441

Typical Applications

Used for control of an altitude valve on a reservoir. The device will signal the pilot system to close or reposition the valve due to a seismic event.



E-X138 (R-3/2011)

CLA-VAL

PO Box 1325 Newport Beach CA 92659-0325
Phone: 949-722-4800 • Fax: 949-548-5441

CLA-VAL CANADA

4687 Christie Drive
Beamsville, Ontario
Canada L0R 1B4
Phone: 905-563-4963
Fax: 905-563-4040

CLA-VAL EUROPE

Chemin des Mesanges 1
CH-1032 Romanel/
Lausanne, Switzerland
Phone: 41-21-643-15-55
Fax: 41-21-643-15-50

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