



# EARTHQUAKE SAFETY SYSTEMS, INC.

www.eqsafetysys.com

## APOLLO Series 2100 Seismic Switch



### SHUT-IT-DOWN SAFELY & SECURELY With the APOLLO EMERGENCY SEISMIC SWITCH

**Ideal for all critical Industrial Applications where accidental shutdowns cannot be tolerated, e.g.:**

- |                                 |                                |
|---------------------------------|--------------------------------|
| Valves, Solenoids and Actuators | Process Control/ Systems       |
| Pipelines / Pumping Station     | Hazardous Material / Chemicals |
| Electronic Security Doors       | Motors, Elevators, etc.        |

#### **DESCRIPTION:**

A fully integrated industrial seismic switch with tri-axial digital seismic sensor ("P" & "S" waves) and minimum 8-hour reserve battery power. The monitor is shipped complete with pre-drilled base plate for easy installation. A NEMA-4 enclosure is shown below; stainless steel above. An optional stainless steel secondary enclosure provides NEMA-4X rated protection.

Seismic alarm and control setpoints (trigger values) are user selectable to local requirements. Outputs peak ground acceleration (PGA) values for all three axes in real-time for retrieval via RS-232C serial connection.



Internal terminal block provides simple field wiring terminations for AC power (110 Vac / 60 Hz standard), Level 1 Alarm, Level 2 Alarm, Loss of AC Alarm, Seismic Trip Alarm (all alarm output contacts are FORM C, rated at 230 Vac, 6A).

Options include: 230Vac / 50 Hz power supply, time history recording with digital recorder module.



#### **FEATURES:**

Powerful design features include multi-setpoint sensor control. Peak ground acceleration values output in real-time via simple RS-232C serial connection. Sensor self-diagnostics. Power-on self-test. On-board 8-hour battery back-up. Maintenance free solid-state tri-axial sensor provides unparalleled accuracy and reliability. Industrial quality NO / NC relay output (user selectable), 230Vac / 10A rated contacts. Easy field termination. Front panel (external) status lights and rugged Test/Reset switch. Fully assembled for fast installation. Electrician friendly with ample room for rigid or flex conduit termination.

**When Earthquakes Strike .... Trust ESS ....**

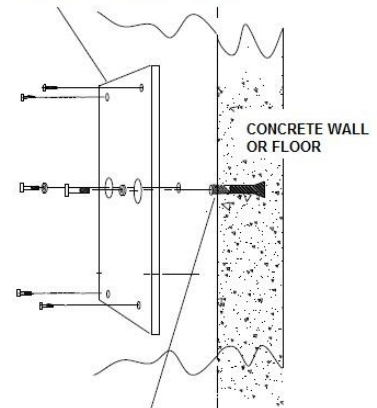
# APOLLO Series 2100 Seismic Switch

## SPECIFICATIONS\*

- Seismic Standards:** Compliance with ANSI/ASCE/SEI 25, ANSI Z21-70, ASME A17 and other seismic standards is achieved with this intelligent and flexible, state-of-the-art technology.
- Sensors:** Solid state, triaxial accelerometer in three orthogonal axes (X,Y & Z ). Detects vertical "P" and horizontal "S" wave accelerations. Outputs *Peak Ground Acceleration* (PGA) values upon exceeding setpoint.
- Frequency Response:** 1 Hz to 15 Hz. Digital filter protects from industrial vibrations.
- Set-points:** User selectable; 0.025  $g_{pk}$  to 0.5  $g_{pk}$  on each axis (XYZ) in 0.001 g increments.
- Communications:** RS-232C or micro-USB serial connection
- Diagnostics:** Self-diagnostics at power on and reset. Front panel visual indicators: "AC power on", "Level 1 Alarm", "Level 2 Alarm".
- Control Outputs:** Two (2) independent Form C (NO & NC) dry, isolated alarm relay contacts change state on acceleration exceeding the user's programmed set-points; latched alarm or momentary up to 2 minutes. Contacts rated up to 250V/6A. Default configuration is latched until operator reset.
- Power Supply:** 120 VAC, 50/60 Hz or 220 VAC, 50 Hz (specify at order). 8-hour autonomy, maintenance-free battery. Optionally powered by 24 Vdc.
- Physical:** Horizontal, NEMA 4 paint, 15" W X 15" D X 10" H (standard).  
Horizontal, NEMA 4 stainless, 16" W X 16" D X 10" H (optional)  
Vertical NEMA 4 stainless, 16" W X 16" D X 10" H (optional)  
Horizontal, NEMA 4X via secondary stainless enclosure, 24"W X 24"D X 12"H (See photo left). Fully gasketed door.  
Status indicators: Power or Sensor Fault, Low and High Seismic Alarms.  
Operating temperature, -20° C to +70° C.  
Humidity, 0% - 100% (non-condensing) with secondary NEMA4X enclosure.  
Weight, 35 lbs. including battery (approx).
- Installation:** Via four (4) 1/4" bolts attached to pre-drilled aluminum baseplate (supplied with Apollo), mounted horizontally (vertical option available). Baseplate weight is 12 lbs. Panel may be wall-mounted (may require an external floor-mount sensor, consult factory for details). Precise leveling not required. Baseplate is affixed to concrete pad, floor or wall via two anchor bolts.
- Options:** Various custom logic schemes / redundancies using flow, pressure, leak detection & level monitoring sensors as a positive feedback.



BASEPLATE IS MACHINED & TAPPED FOUR (4) PLACES ALIGNED WITH APOLLO 2100 ENCLOSURE MOUNTING HOLES. HARDWARE (4 MACHINE SCREWS) SUPPLIED WITH APOLLO 2100.



BASEPLATE, AFFIXED BY TWO (2) CONCRETE ANCHORS, 1/4-20, SUPPLIED BY OWNER.

\*(Subject to change)



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