

QUAKELOGIC

SMART SEISMIC SWITCH



QL-SATURN Smart Seismic Switch

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ASCE 25-97 SELECTABLE SEISMIC PROTECTION

The QL-SATURN is a ready-to-install, robust UL 508 seismic switch that provides 24/7 emergency control or shutdown when earthquake shaking exceeds a user-set threshold. Built for control rooms, industrial processes, elevators and OEM applications, it detects P and S waves with a solid-state triaxial sensor, reports peak X, Y and Z intensity in g, and offers ASCE 25-97, ASME A17.1 and CA3137 selectable response.

- Solid-state triaxial sensing with frequency-selective filtering makes the unit immune to industrial vibration from trucks, compressors and trains near rail lines and in factories.
- Three Form C control relay outputs provide dry, isolated Form C contacts.
- User-selectable setpoints from 0.025g to 0.5g on each axis let the switch match ASCE 25-97, ASME A17.1 or CA3137 local requirements.
- Battery back-up with external charger keeps protection active during power loss, giving over one hour of reserve at maximum demand.

STANDARD FEATURES »

- UL 508
- NEMA 4 Enclosure
- Triaxial Solid-State Sensor
- Three Form C Relays
- Battery Back-Up
- External Charger
- RS-232C & USB
- Front-Panel Test/Reset
- Internal Trip LED
- Vibration Filtering
- Internal Terminal Block
- Sealed Conduit Entry

Key Features

- Maintenance-free solid-state triaxial accelerometer measures earthquake intensity in g on X, Y and Z axes.
- Detects both vertical P-waves and horizontal S-waves.
- Stores and displays Peak Ground Acceleration values on each axis in real time, enabling system performance review after every seismic trip.
- Frequency-selective filtering makes the unit immune to heavy equipment, truck, compressor and train vibration, proven next to rail lines and in factories.
- Three independently programmable Form C relays provide one common fault alarm and two seismic alarms.
- Selectable latched or momentary trip from 1 to 60 seconds. The system can automatically reset after a delay or remain latched until manually reset.
- RS-232C serial or USB communications allow programming of setpoints and recovery of recorded PGA data.
- NEC-compliant Test/Reset operation keeps the operator clear of electrical circuits during self-test and manual reset.
- 2/2 or 2/3 voting with multiple switches is recommended for extremely cost- or safety-sensitive protection applications.

PRODUCT FEATURES

Sensing Element

Solid-state triaxial accelerometer, three orthogonal axes · Detects P-wave and S-wave acceleration on X, Y & Z · Stores and displays PGA in g when triggered

Trigger Response

Setpoints 0.025g to 0.5g per axis, user-selectable · Frequency response 1-10 Hz or 1-15 Hz as programmed · ASCE 25-97, ASME A17.1 & CA3137 selectable

Control Outputs

Three Form C dry isolated relays, 4 A @ 250 VAC · One common fault alarm, two seismic alarms · Latched or momentary trip, 1 to 60 seconds

Communications & Diagnostics

RS-232C (3-wire) serial or USB · Power-On Self-Test (POST) and diagnostic commands · Terminal communication program supplied

Power & Back-Up

120 VAC 50/60 Hz or 220 VAC 50 Hz (specify) · 12 VDC 1.2 Ah sealed lead-acid battery · 1+ hr reserve at maximum demand, external charger

For more information about the features, specifications, and available configurations of the QL-SATURN Smart Seismic Switch, please contact QuakeLogic.



OPTIONAL FEATURES & ACCESSORIES

NEMA 4X ENCLOSURE

Optional NEMA 4X enclosure in place of the standard NEMA 4 housing.

VERTICAL MOUNT UNIT

Optional vertical-mount configuration.

BYPASS SWITCH

Optional bypass switch.

MOUNTING PLATE

Optional mounting plate. Installation via one bolt for the optional plate, rigidly attached to the building slab or other large inertial seismic mass.

TECHNICAL SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Sensor Type	Solid-state triaxial accelerometer, three orthogonal axes
Wave Detection	Vertical P-wave and horizontal S-wave, X, Y & Z axes
Data Output	Peak Ground Acceleration (PGA) in g per axis
Frequency Response	1-10 Hz or 1-15 Hz, as programmed
Setpoint Range	0.025g to 0.5g per axis, user-selectable
Response Standards	ASCE 25-97, ASME A17.1, CA3137 selectable
Communications	RS-232C serial (3-wire) or USB
Diagnostics	Power-On Self-Test (POST) and diagnostic commands
LED Indicators	Internal trip LED and lit front-panel Test/Reset switch
Seismic Activation	Front-panel visual indicator, Form C relay contacts
Control Relays	Three programmable Form C, dry, isolated
Relay Rating	4 A @ 250 VAC
Alarm Allocation	One common fault alarm, two seismic alarms
Trip Mode	Latched (manual reset) or momentary, 1 to 60 s

SPECIFICATION	DESCRIPTION
Line Power	120 VAC 50/60 Hz or 220 VAC 50 Hz (specify)
Battery	12 VDC, 1.2 Ah sealed lead-acid, rechargeable
Battery Reserve	1+ hr at maximum demand
Charger	External charger
Enclosure	NEMA 4 standard (NEMA 4X optional)
Enclosure Size	8 x 8 x 5 in WxDxH
Weight	9 lb; 19 lb with mounting plate
Cable Entry	Sealed cable and conduit entry fitting
Wiring	Internal terminal block for power and relay outputs
Mounting	Four ¼ in bolts to building slab; horizontal
Operating Temperature	-20 to +70 °C
Humidity	0-95% non-condensing
Compliance	UL 508; NEC Electrical Code compliant

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About QuakeLogic:

QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, high-quality solutions to customers worldwide.

Our Commitment

We are committed to quality, innovation, and customer satisfaction – building lasting partnerships through reliable solutions and dependable support.

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