

# QUAKELOGIC

## INDUSTRIAL SEISMIC SWITCH



**QL-APOLLO 2100 Seismic Switch**

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## Industrial Seismic Switch



### SHUT IT DOWN SAFELY AND SECURELY

The QL-APOLLO 2100 is a fully integrated industrial seismic switch built for critical facilities where accidental shutdowns cannot be tolerated. A solid-state tri-axial sensor detects P-wave and S-wave accelerations and outputs real-time Peak Ground Acceleration on all three axes. User-selectable multi-setpoint control, dual Form C alarm relays, and an on-board 8-hour battery backup make it suited to pipelines, process control, and hazardous-materials installations.

- User-selectable multi-setpoint control from 0.025g to 0.5g in 0.001g increments allows adjustment to local requirements.
- On-board maintenance-free battery provides 8-hour autonomy.
- Frequency response is 1 Hz to 15 Hz. A digital filter protects from industrial vibrations.
- Real-time Peak Ground Acceleration output over RS-232C gives operators immediate, retrievable data for every axis.

### STANDARD FEATURES »

- Multi-Setpoint Sensor Control
- Sensor Self-Diagnostics
- Power-On Self-Test
- 8-Hour Battery Backup
- Solid-State Tri-Axial Sensor
- NO / NC Relay Output
- User-Selectable Relay Operation
- Real-Time PGA Output
- RS-232C Serial Connection
- Easy Field Termination
- Front-Panel Status Lights
- Rugged Test/Reset Switch
- Fully Assembled
- Conduit Termination Space
- Pre-Drilled Aluminum Baseplate
- NEMA 4 Enclosure
- Fully Gasketed Door (NEMA 4X configuration)

# Key Features

- Solid-state tri-axial accelerometer measures X, Y and Z axes and detects vertical P-wave and horizontal S-wave accelerations.
- User-selectable setpoints are available from 0.025g to 0.5g on each axis in 0.001g increments.
- Two independent Form C dry, isolated relay contacts with user-selectable NO/NC operation.
- The unit includes an 8-hour battery backup, power-on self-test and sensor self-diagnostics.
- PGA values are available in real time through an RS-232C serial connection.
- Trip operation can be latched or momentary for up to two minutes.
- Front-panel status lights and a rugged Test/Reset switch are provided.
- The maintenance-free solid-state sensor includes a digital filter that protects from industrial vibrations.
- Fully assembled unit ships with a pre-drilled aluminum baseplate and space for rigid or flex conduit termination. Precise leveling is not required.

## PRODUCT FEATURES

### Sensing Element

Solid-state triaxial accelerometer, X/Y/Z orthogonal axes · Detects vertical P-wave and horizontal S-wave · Frequency response 1 Hz to 15 Hz with digital filter

### Setpoints & Trip

User-selectable 0.025g to 0.5g per axis · 0.001g adjustment increments · Latched (default) or momentary up to 2 minutes

### Alarm Outputs

Two independent Form C (NO & NC) dry contacts · Isolated relay outputs · User-selectable relay operation

### Data & Communications

Real-time PGA output on all three axes · RS-232C serial connection · Output triggered when setpoint exceeded

### Diagnostics & Indicators

Self-diagnostics at power-on and reset · Front panel: AC Power On, Level 1, Level 2 · Fault, AC power loss and Seismic Trip status

### Power & Backup

110 VAC / 60 Hz standard (Description); 120 VAC 50/60 Hz or 220 VAC 50 Hz (Specifications) · Maintenance-free battery, 8-hour autonomy · Loss of AC alarm output

**For more information about the features, specifications, and available configurations of the QL-APOLLO 2100 Seismic Switch, please contact QuakeLogic.**



## OPTIONAL FEATURES & ACCESSORIES

### 230 VAC / 50 HZ POWER SUPPLY

Optional 230 VAC / 50 Hz power supply.

### 24 VDC POWER

Optional 24 VDC power.

### TIME-HISTORY RECORDER

Optional digital recorder module for time-history recording.

### NEMA 4X SECONDARY ENCLOSURE

Stainless-steel outer enclosure providing NEMA 4X protection; 0%–100% humidity, non-condensing, with secondary NEMA 4X enclosure.

## TECHNICAL SPECIFICATIONS

| SPECIFICATION          | DESCRIPTION                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seismic Standards      | ASCE 25, ANSI Z21-70, ASME A17 and other seismic standards                                                                                                                     |
| Sensor Type            | Solid-state triaxial accelerometer, three orthogonal axes (X, Y, Z)                                                                                                            |
| Wave Detection         | Vertical P-wave and horizontal S-wave accelerations                                                                                                                            |
| Data Output            | Peak Ground Acceleration (PGA), all three axes                                                                                                                                 |
| Frequency Response     | 1 Hz to 15 Hz, digital vibration filter                                                                                                                                        |
| Setpoints              | 0.025g to 0.5g per axis, 0.001g increments                                                                                                                                     |
| Communications         | RS-232C serial connection                                                                                                                                                      |
| Diagnostics            | Self-diagnostics at power-on and reset                                                                                                                                         |
| Front-Panel Indicators | AC Power On, Level 1 Alarm, Level 2 Alarm                                                                                                                                      |
| Control Outputs        | Two independent Form C (NO & NC), dry, isolated contacts                                                                                                                       |
| Trip Operation         | Latched or momentary up to 2 minutes                                                                                                                                           |
| Default Trip Mode      | Latched until operator reset                                                                                                                                                   |
| Relay Contact Rating   | 230 VAC / 6 A (Description); 230 VAC / 10 A (Features); up to 250 V / 6 A (Specifications)                                                                                     |
| Power Supply           | 110 VAC / 60 Hz standard (Description). Specifications state 120 VAC, 50/60 Hz or 220 VAC, 50 Hz (specify at order). 230 VAC / 50 Hz power supply is also listed as an option. |
| Optional Power         | 24 VDC                                                                                                                                                                         |
| Battery                | Maintenance-free, 8-hour autonomy                                                                                                                                              |

| SPECIFICATION                 | DESCRIPTION                                                                     |
|-------------------------------|---------------------------------------------------------------------------------|
| Standard Enclosure            | Horizontal NEMA 4 painted, 15 in W x 15 in D x 10 in H                          |
| Optional Horizontal Enclosure | NEMA 4 stainless steel, 16 x 16 x 10 in                                         |
| Optional Vertical Enclosure   | Vertical NEMA 4 stainless steel, 16 x 16 x 10 in                                |
| NEMA 4X Configuration         | Secondary stainless enclosure, 24 x 24 x 12 in                                  |
| Door                          | Fully gasketed                                                                  |
| Status Indicators             | Fault, AC Power Loss, Seismic Trip, AC Power On                                 |
| Operating Temperature         | -25 °C to +70 °C                                                                |
| Humidity                      | 0% to 100% non-condensing with secondary NEMA 4X enclosure                      |
| Weight                        | Approx. 35 lb including battery                                                 |
| Baseplate Weight              | 12 lb                                                                           |
| Installation                  | Four 1/4 in bolts to pre-drilled aluminum baseplate, horizontal mount           |
| Concrete Attachment           | Baseplate to concrete pad/floor via two anchor bolts                            |
| Leveling                      | Precise leveling not required                                                   |
| Wall Mounting                 | Panel wall-hung in some cases with external floor-mount sensor; consult factory |
| Field Wiring                  | Internal terminal block: AC power, Level 1/2 alarms, Loss of AC, Seismic Trip   |

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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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