

QUAKELOGIC · EARTHQUAKE RESPONSE AUTOMATION

QUAKERELAY

NETWORKED SEISMIC RELAY CONTROLLER

Turns an earthquake alert into action: sirens, machine shutdown, elevator recall and utility shut-off, locally or over the internet.

120 / 230 VAC POWER RELAY

4 × DRY CONTACTS

MODBUS TCP

ETHERNET · WI-FI · BLUETOOTH

LINUX + WEB UI



MADE IN USA

With Globally Sourced Materials

PRODUCT OVERVIEW

ONE ALERT. EVERY RESPONSE.

A complete, computerized relay system in one outdoor enclosure, built to act on earthquake alerts in the seconds that matter.

QUAKERELAY is the output stage of a QuakeLogic earthquake early warning or seismic monitoring system. A hardened Linux controller receives alerts from QUAKEAI, QUAKEY-PRO, QUAKEALERT and QUAKEALERT devices over the network, applies the site's trip logic, and switches outputs within the same enclosure.

It drives sirens and other mains loads directly at 120 or 220-240 VAC, signals PLCs, elevator controllers and machine interlocks through four dry contacts, and shares its state with SCADA and building systems over Modbus TCP. Outputs can also be triggered, tested and reset remotely through the built-in web UI or the API.



Standard pole-mount configuration

4

DRY CONTACTS

Form C, voltage-free

1

MAINS POWER RELAY

120 or 220-240 VAC

TCP

MODBUS & API

Ethernet · Wi-Fi · BT

24/7

LINUX CONTROLLER

Web UI, remote access

STANDARD FEATURES

- Linux controller (64-bit, quad-core)
- Built-in web UI, local or remote
- Gigabit Ethernet
- Wi-Fi 2.4 / 5 GHz
- Bluetooth 5.0 / BLE
- Modbus TCP server & client
- REST API · MQTT · TCP trigger
- 4 × dry contacts, Form C
- Mains power relay, Form C
- Switches 120 VAC or 220-240 VAC
- Universal 100-240 VAC input
- Internal 24 VDC power supply
- SSH & VPN remote access
- Event log with NTP time stamps
- IP65 vented outdoor enclosure
- Pole or wall mounting

BUILT FOR EVERY EARTHQUAKE RESPONSE

One controller covers alerting, protective shutdown and remote operation, so a site needs one device instead of several single-purpose switches.



EARTHQUAKE EARLY WARNING SIRENS

Trips outdoor sirens, strobes and PA chimes the moment a QuakeLogic sensor or EEW feed issues an alert, seconds before strong shaking arrives.



MACHINE & PROCESS SHUTDOWN

Drives stop, hold or safe-state inputs on CNC machines, conveyors, robots, kilns and process lines to protect people, tooling and product.



ELEVATOR SEISMIC SWITCH

Provides the seismic trigger contact to the elevator controller so cars run to the nearest floor, open doors and stop.



REMOTE SIREN ACTIVATION

Authorized operators trip, test or reset outputs over the internet from the built-in web UI or the secure API, from any location.



SEISMIC SWITCH REPLACEMENT

Paired with QUAKEAI, QUAKEY-PRO or QUAKENODE, it acts as a networked, threshold-programmable seismic switch with full event logging.



GAS, FUEL & UTILITY SHUT-OFF

Closes solenoid valves, isolates fuel and gas lines, and drops HVAC and fan systems to limit fire and leak risk after shaking.



PLC, SCADA & BMS INTEGRATION

Publishes alert state, intensity and relay status as Modbus TCP registers so existing control systems can act on every event.



DRILLS, TESTS & SCHEDULED ALERTS

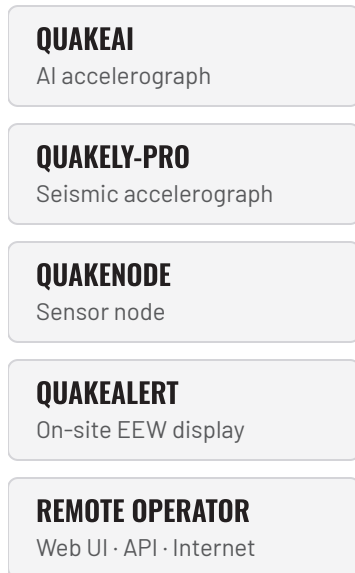
Runs scheduled siren tests and evacuation drills, with every activation time-stamped and logged for compliance records.

HOW IT WORKS

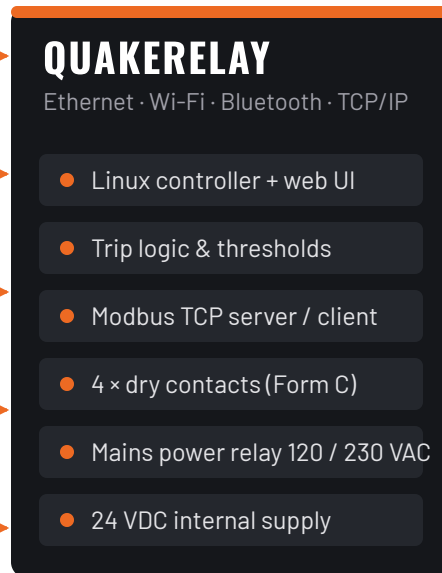
FROM ALERT TO ACTION, AUTOMATICALLY

QUAKERELAY sits between the sensing layer and the equipment it protects, and talks to both over standard networks.

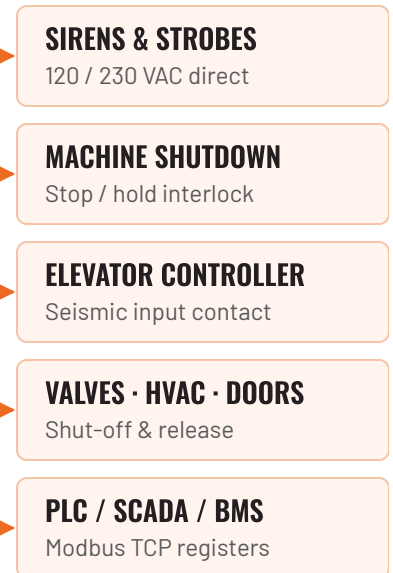
SENSORS & ALERT SOURCES



QUAKERELAY CONTROLLER



FIELD ACTIONS



01

DETECT

A QuakeLogic sensor or EEW source detects P-wave or strong-motion shaking and sends an alert with intensity over Ethernet or Wi-Fi.

02

DECIDE

QUAKERELAY applies the site's rules: intensity thresholds, output mapping, voting between sensors, and time windows.

03

ACT

Outputs switch: sirens sound, machines stop, elevators recall, valves close. Every action is time-stamped and logged.

Fail-safe by design. Each output can be set to energize or de-energize on alarm. A software watchdog and a configurable loss-of-communication action make sure a failed link or controller is never silent.

CONTROL IT FROM ANYWHERE

QUAKERELAY runs its own Linux software stack. Nothing to install on site: open a browser on the local network, or connect securely over the internet.



BUILT-IN WEB UI

Live dashboard with alert status, intensity, relay states and device health. Configure thresholds, map outputs and run tests from any browser.



LINUX REMOTE ACCESS

Secure shell and VPN access for administrators. Update, diagnose and back up the controller remotely, without a site visit.



RELAY OVER TCP/IP

Trip or reset any output over Ethernet, Wi-Fi or the internet through the HTTPS REST API, MQTT, Modbus TCP or a raw TCP command.



SECURITY & AUDIT

User accounts and roles, HTTPS / TLS, SSH keys and firewall rules. Every command, alert and output change is recorded in the log.

OUTPUT LOGIC MODES

MODE	BEHAVIOR
Latching	Output holds until reset from the UI, API or Modbus
Pulse / momentary	Output closes for a set time, e.g. a trip pulse to a PLC
Timed	Siren runs for a programmed duration, then stops
Fail-safe	Energize or de-energize on alarm, selectable per output
Threshold mapping	Each output tied to its own intensity or alert level
Test / drill	Scheduled or manual test with log entry

ETHERNET

WI-FI

BLUETOOTH

MODBUS TCP

REST API

MQTT

SSH

VPN

SWITCH SIGNALS AND MAINS POWER

Separate output paths keep low-voltage signaling and mains switching apart, each with a rating suited to its job.

CHANNEL	TYPE	RATING	TYPICAL CONNECTION
Power relay (K-PWR)	1 × Form C	16 A @ 250 VAC resistive	Sirens, strobes, mains loads at 120 or 220–240 VAC
Dry contacts (K1–K4)	4 × Form C	5 A @ 250 VAC / 30 VDC max	PLC inputs, elevator seismic input, interlocks
Modbus TCP	Ethernet / Wi-Fi	Port 502, server & client	SCADA, BMS, PLC: alarm, intensity, relay states
Network trigger	TCP/IP	HTTPS API, MQTT, TCP socket	Remote activation, test and reset
AC input	L / N / PE	100–240 VAC, 50/60 Hz	Ready for 120 VAC or 220–240 VAC service

Wiring rule. Use the dry contacts for signaling circuits (30 VDC or less recommended). Switch 120 VAC or 220–240 VAC loads such as sirens through the power relay, which is rated and spaced for mains voltage. Mains wiring must be installed by a qualified electrician to local code.

INSIDE THE ENCLOSURE

- Industrial Linux controller with Wi-Fi and Bluetooth
- Four-channel relay board with optocoupled drive
- Mains-rated power relay on DIN rail
- 24 VDC DIN-rail power supply
- Fused AC input and protective earth
- Labeled field terminal strip
- 12 VDC ventilation fan behind hooded vents
- Bottom-entry cable glands

ENCLOSURE OPTIONS

STANDARD OUTDOOR ENCLOSURE

Powder-coated cold-rolled steel, IP65, dual hooded vents with fan. 15.7 × 11.8 × 7.9 in, pole or wall mount.

STAINLESS STEEL ENCLOSURE

For coastal, chemical and wash-down sites. Available in 10 × 8 × 6 in through 16 × 16 × 6 in sizes.

SIREN PACKAGE

Pair with the QuakeLogic 120 dB industrial siren and strobe for a ready-to-install alert point.

TECHNICAL SPECIFICATIONS

QUAKERELAY AT A GLANCE

CONTROLLER & NETWORK	VALUE	ELECTRICAL & MECHANICAL	VALUE
Function	Networked seismic relay controller	AC power input	100–240 VAC, 50/60 Hz (120 or 220–240 VAC)
Controller	Industrial Linux SBC, 64-bit quad-core ARM	Internal supply	24 VDC DIN-rail power supply
Operating system	Debian-based Linux, hardened	Power relay output	1 × Form C; switches 120 or 220–240 VAC loads
Storage	Industrial-grade flash; on-board event log	Power relay rating	16 A @ 250 VAC, resistive
Ethernet	1 × RJ45, 10/100/1000 Mbps	Dry contact outputs	4 × Form C (COM / NO / NC), voltage-free
Wi-Fi	IEEE 802.11ac, dual-band 2.4 / 5 GHz	Dry contact rating	5 A @ 250 VAC / 5 A @ 30 VDC max
Bluetooth	5.0 / BLE, local setup & commissioning	Dry contact use	Low-voltage signaling, ≤ 30 VDC recommended
Industrial protocol	Modbus TCP, port 502 (server & client)	Output modes	Latching, pulse, timed, fail-safe
Network triggers	REST API (HTTPS), MQTT, TCP/UDP socket	Enclosure	Cold-rolled steel, powder-coated, IP65
Remote access	Web UI (HTTPS), SSH, VPN	Dimensions	15.7 × 11.8 × 7.9 in (400 × 300 × 200 mm)
Time sync	NTP; all events time-stamped	Ventilation	Dual hooded vents, 12 VDC cooling fan
Compatible devices	QUAKEAI, QUAKEY-PRO, QUAKENODE, QUAKEALERT	Mounting	Pole (band clamps) or wall
User interface	Built-in web UI, desktop & mobile browsers	Operating temp.	–4 °F to +122 °F (–20 °C to +50 °C)
Security	User accounts, HTTPS / TLS, SSH keys, firewall	Humidity	5–95 % RH, non-condensing

QUALITY & COMPLIANCE

Designed, assembled and tested by QuakeLogic in Roseville, California, under an ISO 9001:2015 quality management system. Every unit is bench-tested on all outputs before shipment.

Specifications are subject to change without notice. Elevator and life-safety integrations must be approved by the equipment manufacturer and the authority having jurisdiction.

SUPPORT

Delivered pre-configured for the site's sensors and outputs. QuakeLogic engineers provide remote commissioning, firmware updates and technical support from the USA.

QUAKERELAY

NETWORKED SEISMIC RELAY CONTROLLER

CORPORATE HEADQUARTERS

QuakeLogic Inc.

2008 Opportunity Dr., Suite 130
Roseville, CA 95678, USA
Monday – Friday, 9:00 AM – 5:00 PM PT

CONTACT

+1(916) 899-0391
sales@quakelogic.net
products.quakelogic.net

ABOUT QUAKELOGIC

California-based engineering company delivering seismic monitoring, earthquake early warning, structural health monitoring and testing systems worldwide.



Scan to view
QUAKERELAY online



MADE IN USA

With Globally Sourced Materials