

A home security system is only as reliable as the wire that ties it together. Cameras, keypads, door contacts, sirens, and network video recorders all depend on cable that can carry power and signals cleanly, survive heat and sunlight, and meet California's electrical and fire codes. I have walked into too many houses where a good alarm panel was hamstrung by cheap speaker wire or brittle outdoor cable that cracked after a few summers.

Choosing the right wire is not glamorous work, but it is the difference between a system that runs quietly for 15 years and one that throws random faults every time the temperature spikes.

This guide walks through how to think about wire and cabling for home security systems in California, and what I actually recommend in real projects.

Cabling vs wiring: what it does and why the terms matter

People use "cabling" and "wiring" interchangeably, which confuses things when you start looking at security drawings or talking to inspectors.

At a practical level, wiring usually refers to building power circuits, the 120-volt and 240-volt conductors electricians run in Romex or conduit. Cabling tends to refer to low-voltage and communications media: network cable, alarm wire, coax for cameras, and so on.

So, what does cabling do in a home security context?



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It carries three things:

1. Low-voltage power from a control panel or power supply to devices like keypads, sensors, and cameras.

2. Data or signals, such as the change in resistance when a door opens, or the digital video stream from an IP camera.
3. Sometimes both together, as in Power over Ethernet (PoE), where the same cable feeds power and data to a camera.

When someone asks, "Is cabling the same as wiring?" my answer is: not exactly. All cabling is wiring in the literal sense, but in the trades we separate high-voltage branch circuits from low-voltage signal and network cabling. That distinction matters for permits, inspection, and what type of contractor you hire.

The three primary components of cabling

A cable run is more than just the copper or fiber in the wall. For planning and cost estimates, it helps to think in terms of components.

Typical home security cabling has three primary components:

- The cable itself: twisted pair, coax, fiber, or multi-conductor alarm cable with the correct rating (plenum, riser, outdoor, etc.)
- The terminations: jacks, keystones, patch panels, BNC connectors, punch-down blocks, and the strain reliefs and boots that keep them from being yanked loose
- The pathway: conduit, raceways, wall cavities, under-eave spaces, and any sleeves through fire-rated walls or between floors

When I walk a site, I am looking at all three. Good cable poorly terminated or run through a hot, sharp metal chase will fail just as surely as bargain-bin copper-clad aluminum.

The common cable families in home security

There is no single "security cable." Different parts of the system use different media. Most California homes that add modern security will end up with a mix of at least five types of cable.

1. Multi-conductor alarm cable

For traditional hardwired alarms and sensors, the workhorse is multi-conductor stranded cable, usually:



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- 22/2 (two conductors, 22 AWG) for simple door and window contacts
- 22/4 for motion detectors, keypads, glass-break sensors, and powered devices that need both power and data

Higher-end installs may use 18 AWG for longer runs or devices with higher current draw.

If you are wondering, “What are the three types of cabling?” in the narrow sense of alarm systems, I would describe them as sensor cabling (door and window contacts), powered device cabling (motions, glass-breaks, keypads), and siren/power cabling (heavier gauge for horns and auxiliary power).

2. Network cabling: Cat5e, Cat6, Cat6A

The most common type of cabling used in networks today for homes is still Category 6 (Cat6) unshielded twisted pair. Many older houses have Cat5e; new high-end builds sometimes specify Cat6A.

For home security, Cat6 strikes the best balance. It handles PoE cameras comfortably, supports gigabit speeds for NVRs and access points, and is affordable. If someone asks, “What is the best wire for home use?” I usually answer: Cat6 for anything network related, then task-specific cable for alarm and power.

Use solid copper, not copper-clad aluminum. Verify “CMR” or “CMP” rating for indoor use, and an outdoor or direct-burial rating if the run leaves the structure.

3. Coaxial cable for legacy and some HD cameras

Plenty of California homes still have older DVRs with analog or HD-over-coax cameras. Those use RG59 or RG6 coax, often bundled with a pair of power conductors in what installers call Siamese cable.

If you are building from scratch, I rarely recommend coax anymore for security cameras unless you are extending an existing coax infrastructure. IP cameras over Cat6 give much more flexibility.

4. Fiber optic cable

In a typical single-family home, fiber is still the exception. It appears in estate-size properties where camera runs exceed 300 feet, or where lightning and ground potential differences are a concern.

When people ask, "What are the 5 types of cable?" in a general networking or security conversation, I usually list:

- Multi-conductor alarm cable
- Category cable (Cat5e / Cat6 / Cat6A)
- Coaxial cable
- Fiber optic cable
- Power cable (line voltage and low-voltage DC)

That covers almost every run you see in a security diagram.

5. Power cable: line voltage and low-voltage

Security gear needs both 120-volt power and low-voltage power (often 12 or 24 volts DC).

Line-voltage wiring is firmly in the electrician's lane. Do electricians install cable outlets and camera power outlets? Yes, and in California they generally should be the ones running any new 120-volt branch circuits, recessed receptacles behind NVRs, and power for attic or eave locations. Most low-voltage contractors coordinate with an electrician for those parts.

For low-voltage DC power distribution, installers use 18/2 or 16/2 stranded copper, or they rely on PoE over Cat6 to avoid separate power wiring.

California specific factors that affect wire choice

A cable that performs well in Seattle can fail early in Bakersfield. California brings particular stressors you need to plan for.

Heat and UV exposure

In inland areas, attics often climb above 140 °F in summer. Many cheaper indoor cables use jackets that soften or deform at those temperatures, or they turn brittle after a few hot seasons.

Outdoors, UV is unforgiving. Standard indoor PVC jackets will chalk and crack under direct sun. For cameras mounted on stucco or under shallow eaves, UV-rated or sunlight-resistant cable is essential.

Look for:

- "Sunlight resistant" or "UV resistant" on outdoor cable jackets
- Temperature ratings that meet or exceed your local highs plus a safety margin

Wildfire and smoke considerations

California building codes, and sometimes insurance carriers, pay attention to flame spread and smoke production. Inside walls and between floors, CMR (riser) and CMP (plenum) ratings may be required, especially in multifamily buildings.

Even in single-family homes, using riser-rated alarm and network cable is wise. It resists flame spread better than cheap generic cable and holds up better in vertical runs.

Seismic and movement

Quakes and smaller ground shifts tug on cable runs. A network drop that is stretched tight between a rigid panel and a stud can pop loose in a moderate shake.

Good practice in California is to leave service loops at devices and panels, use strain reliefs, and avoid sharp bends around framing members. Conduit runs should account for small movement without crushing the cable.

Moisture and coastal air

Near the coast, salt and moisture creep into outdoor junction boxes and camera housings. Use weather-rated connectors, gaskets, and non-ferrous hardware. For cable, outdoor or direct-burial ratings with gel or water-blocking compounds prevent corrosion from creeping down the conductors.

Matching wire types to each part of a home security system

When I design a system, I do not start from the catalog. I walk the property and break the system into zones: perimeter, interior, vertical risers, and network backbone. Then I match cable to each role. Here is how that usually shakes out.

Doors, windows, and simple sensors

For most hardwired contacts on doors and windows in a California home, 22/2 stranded copper alarm cable is ideal. It is flexible, easy to pull, and adequate for the very small currents involved.

If you think you might add additional sensors or powered devices near [Cabling Services Provider California](#) a door later, running 22/4 instead gives you two spare conductors. I have lost count of the times that saved a truck roll when a client decided they wanted a keypad or a request-to-exit button near a door that originally had only a contact.

Indoor runs can use CMR alarm cable in wall cavities. Any [Cabling Services Provider California](#) portion that might see heat or moisture, such as passing through an unconditioned attic or out to a gate, should be upgraded to cable with suitable temperature and outdoor ratings.

Motions, glass-breaks, keypads, and sirens

Powered devices like motion detectors and glass-break sensors need both power and signal. In most homes:

- 22/4 works for short runs, such as living room motions and hall sensors
- 18/4 is a safer choice for longer runs, high-current devices, or where multiple devices share a power feed

Siren and sounder circuits usually call for heavier wire to handle current. For a typical 30- to 80-watt siren pair, 18/2 or even 16/2 stranded copper is common. California code also cares where that cable runs relative to other building wiring, so following manufacturer and NEC guidance is more than a suggestion.

Cameras: IP vs coax

Modern camera systems in California almost always use IP cameras with PoE. For those, Cat6 UTP is my go-to:

- Solid copper, 23 or 24 AWG

- CMR for indoor, UV-rated outdoor Cat6 for eaves and external walls
- Shielded only when necessary, such as near strong RF or in long parallel runs with high-voltage feeds

PoE has simplified design dramatically. Instead of asking “What are the three types of cabling?” to a client, I often say, “We will home-run Cat6 to every camera location, then use PoE. No separate power bricks outdoors.”

Legacy or hybrid systems with coax cameras should stick to quality RG59 or RG6 Siamese cables with solid copper center conductors. Cheap coax with steel or copper-clad steel can cause trouble with some HD analog formats over longer distances.

Network backbone and Wi-Fi support

Your security system leans heavily on your home network. The NVR, smart locks, doorbell cameras, and cloud-connected alarm panels all depend on solid network cabling.

Best practice for a new build or a major remodel in California is:

- Cat6 home runs from a central structured media panel to key locations: NVR, Wi-Fi access points, smart TVs, and office desks
- At least one Cat6 to any closet or utility room where you might later place a hub, controller, or mesh node

Some homeowners ask, “Who is the cheapest cable provider?” meaning internet service, not copper wire. Prices change constantly and vary by region. In many California neighborhoods, Spectrum, Xfinity, AT&T, and smaller fiber providers compete. My advice is to treat the ISP choice separately from your internal cabling. Even if you switch providers, good Cat6 infrastructure inside your home will serve you across multiple ISP contracts.

Smart locks and access control

Many residential smart locks are wireless and battery powered. Higher-security setups, or those integrating gate controls, intercoms, and card readers, will need a blend of cabling:

- 18/2 or 18/4 for lock power
- 22/6 or Cat5e/Cat6 for readers and door position sensors in more complex systems

In California’s hotter, dustier regions, wired strikes and maglocks with clean power and supervised cabling often outperform purely wireless solutions, especially on heavy gates.

How much does cabling cost?

When homeowners ask, “How much does cabling cost?” they usually mean both material and labor for a complete security prewire or retrofit.

Material costs in California for quality cable (as of recent years) typically fall into these ranges:

- Alarm cable (22/2, 22/4 CMR): roughly \$80 to \$150 per 1,000-foot box, depending on brand and rating
- Cat6 CMR: roughly \$150 to \$300 per 1,000-foot box for solid copper, more for outdoor or plenum variants
- Siamese coax for cameras: roughly \$150 to \$250 per 1,000-foot reel
- 18/2 or 16/2 power cable: roughly \$100 to \$200 per 500-foot spool for good copper

Labor is usually the larger part. In tract-home retrofits in California suburbs, I often see:

- Simple single-story camera or alarm drops: around \$125 to \$250 per drop for labor, when part of a multi-drop job

- Whole-home prewire for a typical 2,000 to 3,000 sq ft new build: anywhere from \$1,500 to \$4,000 in labor for security and data, depending on how dense the design is

Custom homes, complex framing, stucco exteriors without accessible eaves, and tight crawlspaces can push costs higher. What matters more than the lowest bid is whether the installer is using rated cable, proper pathways, and clean terminations. Saving a few hundred dollars on labor or by using copper-clad aluminum can easily cost you more later in troubleshooting and failures.

Is cabling difficult to install?

The honest answer: it depends what you are trying to do.



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Pulling a single Cat6 run from a living room to an office in a single-story house with attic access is within reach for a careful DIYer. Running a full security prewire in an existing two-story California stucco home with finished walls is a very different animal.

DIY cabling looks easier on video than it feels in real attics at 130 °F with blown insulation and hidden cross-bracing. Mistakes can be expensive: drilling a plumbing stack, compromising a fire-rated assembly, or violating separation rules between low-voltage and high-voltage circuits.

A simple decision checklist helps:

- If you only need one or two short, low-risk runs and have clear access, DIY can be reasonable with patience and research
- If you are opening walls, dealing with stucco, or routing near electrical panels, hire a licensed professional
- Any line-voltage wiring must be done by an electrician under California code, not as a DIY science project

So, is cabling difficult? For small, straightforward tasks, it is manageable with the right tools and respect for safety. For a full security system that truly protects your home, professional design and installation is the more reliable path.

Do electricians install cable outlets for security and network?

In California, electricians typically handle:

- New 120-volt receptacles for NVRs, networking gear, and camera power injectors
- Conduit runs that carry both power and low-voltage pathways in some jurisdictions
- Sometimes, basic coax and data outlets, especially in production housing

Low-voltage security and network contractors generally handle:

- Alarm wiring, sensors, and keypads
- Camera and NVR low-voltage cabling
- Network cabling and terminations

For a well-coordinated project, the electrician and low-voltage contractor coordinate on locations so that the security panel, structured media enclosure, and power feeds all land where they should.

If you call your local electrician and ask, "Do you install cable outlets for cameras and alarm panels?" the answer is often "We can install the power and boxes, but we prefer a low-voltage specialist to run and terminate the security cabling."

What is the most robust wire strategy for a California home?

If I had to condense years of projects into a practical recipe for a new or heavily remodeled house, it would look like this.

- Cat6 home runs from a central location to every camera position, every TV location, each bedroom, the office, and a couple of anticipated Wi-Fi access point locations.
- 22/4 alarm cable to every door, major window group, and potential keypad location, with 18/2 to siren locations.
- All interior cable at least CMR rated, with UV-rated outdoor Cat6 and alarm cable where exposed under eaves or on exterior walls.
- Conduit in a few strategic places: from the structured media panel to the attic, from the panel to the garage, and between floors. This makes later upgrades or fiber retrofits realistic without tearing into walls.

Overbuilding cabling by even 20 to 30 percent during a build or major renovation costs less than a single serious retrofit later.

Bringing the pieces together

Cabling is the quiet backbone of a security system. It answers questions like:

- What are the three primary components of cabling? The cable, its terminations, and its pathway.
- What are the three types of cabling? For home security, think sensor, power, and data/network.
- What is the best wire for home use? Often Cat6 for network and PoE, with proper alarm and power cables where needed.

Good materials are only half the battle. The real reliability comes from matching cable type to each device, respecting California's climate and codes, and installing with an eye for the next decade, not just the next inspection.

If you approach wire selection this way, you do not just buy cable, you build a durable nervous system for your home that quietly does its job through heat waves, storms, and everything in between.