

Choosing the Right Control and Security Cable for Modern Installations

Why Cable Choice Matters in Security and Control Systems

Every installer I know has a story about a job that went sideways because of the wrong cable. Maybe it was a surveillance system that kept dropping signal, or an access control setup that refused to talk to the panel. More often than not, the culprit wasn't the camera or the controller, it was the cable running between them. In security and control work, the cable is the backbone. Pick the wrong one and you'll be back on site, pulling new runs and explaining to the client why their shiny new system is glitching.

That's why understanding the role of a proper control and security cable is essential for anyone working in the trade. Whether you're wiring up a multi-tenant office building, a retail shop, or a residential home, the cable you choose determines not just performance but also your liability down the track. I've seen installations where cheap, unrated cable was used for an intercom system, only to fail within a year because the insulation degraded in the roof cavity. That kind of mistake costs time, money, and trust.

When I started out, I used whatever was cheapest. I learned the hard way that not all cable is built for the job. A quality [control and security cable](#) is designed to handle both power and data in demanding environments. It needs to resist interference, stand up to physical stress, and comply with Australian standards. That's particularly important for systems like fire alarm cable or access control cable, where failure isn't just an inconvenience, it's a safety issue.

The Range of Cable Types for Security and Control

Once you start looking at the options, it can feel overwhelming. There's surveillance system cable, intercom cable, fire alarm cable, data and security cable, and more. Each has its own construction, shielding, and conductor requirements. But the good news is that most jobs fall into a few common categories. If you understand those, you can make smart decisions on site.



Structured Cabling and Data-Security Hybrids

More and more modern security systems run over structured cabling, typically Cat6 cable. That's especially true for IP cameras and networked access control panels. Cat6 gives you the bandwidth for high-res video and the reliability for PoE (Power over Ethernet). It's clean, standardised, and easy to terminate if you have the right tools, a decent termination kit with wire strippers and a punch-down tool makes all the difference.

But not every system is pure data. Some installations require a hybrid approach, where you need both power and signal in the same sheath. That's where a purpose-built control and security cable comes in. It might combine twisted-pair data lines with a pair of power

conductors, all in one jacket. That saves time on installation and keeps the job tidy. Brands like Schellinger and Belden make solid options in this space, and I've had good results with both.

Coaxial Cable for Analogue and Legacy Systems

Despite the shift to IP, there's still a lot of coaxial cable being used. RG59 coax is the standard for analogue cameras and many older CCTV systems. It's cheap, it works, and it's easy to terminate with BNC connectors. But it has limits. You can't run it for long distances without signal loss, and it doesn't carry power. If you're working on a retrofit, you'll often find RG59 already in the walls, and you need to decide whether to reuse it or pull new cable. My rule of thumb is: if the existing coax is in good condition and the system is analogue, leave it. If you're upgrading to IP, pull Cat6.

For larger installations or runs longer than 200 metres, you might need armoured cable or a specialised surveillance system cable with thicker conductors and better shielding. That's especially true for outdoor runs or underground paths. I once ran armoured cable across a carpark for a set of PTZ cameras, and the peace of mind that comes with that extra physical protection is worth the extra cost.

Security Alarm Wiring and Fire Alarm Cable

Security alarm wiring is another category that demands attention. It's typically a multi-core cable with solid conductors, designed for low-voltage signalling. You'll see it in alarm panels, PIR sensors, door contacts, and keypads. It's not the same as general-purpose electrical cable, the insulation is rated for continuous flex and the conductors are tinned for easy soldering or crimping.

Fire alarm cable is a different beast altogether. It must comply with AS 1670.1 and often requires a red sheath, mechanical protection, and the ability to maintain circuit integrity under fire conditions. That's not something you want to guess at. I always use a reputable brand like Tyco or Belden for fire alarm cable, and I verify the specification against the fire engineer's requirements before ordering. The same goes for intercom cable and access control cable, each has its own standard, and it pays to check.



Practical Considerations for the Installer

Beyond the cable type itself, there are a few practical factors that separate a smooth job from a headache. The first is termination. A good termination kit with quality wire strippers can save you hours. I've seen guys try to strip RG59 with a utility knife, and it always ends in nicked conductors and intermittent faults. Spend the money on proper tools. It's an investment that pays for itself on the first job.

The second factor is supplier reliability. When you're on a deadline, you can't afford to wait a week for cable to arrive. That's why I value suppliers that offer trade electrical supplies with Sydney same-day delivery. If you run short on a roll of Cat6 or need a specific spool of access control cable by lunchtime, having a local supplier that can get it to site in hours is a lifesaver.

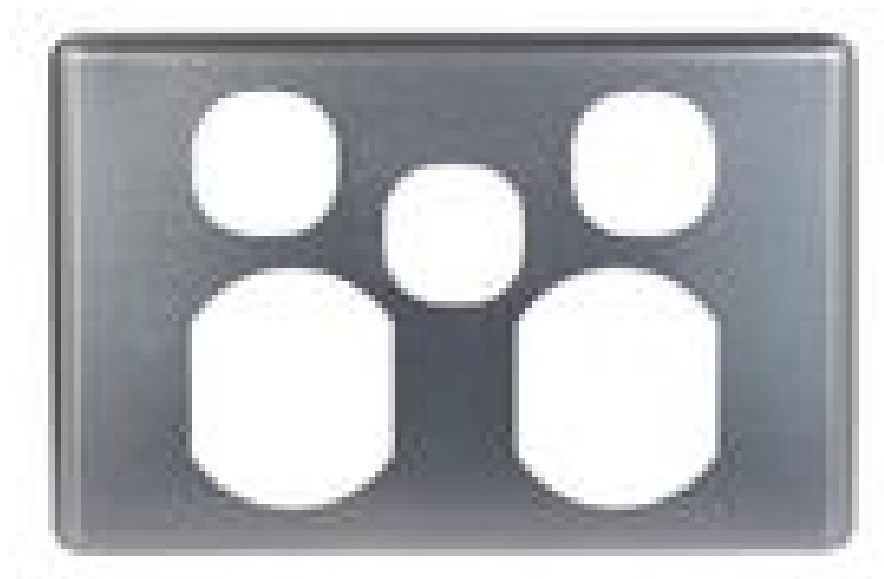
Companies like SCHNAP stock a broad range, from Clipsal and HPM accessories to Commscope patch leads and Schellinger cable, and they understand the urgency of a commercial install.

The third factor is planning the cable path. I always walk the route before pulling any cable. I check for existing conduit, sharp edges, heat sources, and potential interference from power lines. If the path crosses a high-traffic area, I consider armoured cable or at least a protective conduit. It's easier to do it right the first time than to come back and replace a damaged run later.

Making the Right Call on Site

At the end of the day, choosing the right cable comes down to understanding the system, the environment, and the standards. Whether you're running Cat6 for a new IP camera system, RG59 coax for an analogue upgrade, or a multi-conductor cable for a complex access control setup, the same principles apply. Use quality materials, terminate them properly, and don't cut corners on the cable itself. The cable is the part of the system that's hardest to replace once the walls are closed. Get it right, and the system will work for years. Get it wrong, and you'll be back.

I keep a few spools of common cables in my van at all times, Cat6, security alarm wiring, and a good multi-purpose control and security cable that covers most of my access control and intercom jobs. When the spec calls for something specific, like a Plenum-rated cable or a particular brand like Tyco or Belden, I order it in advance. But having a solid all-rounder on hand means I can handle most service calls and small installs without a trip to the supplier.



For larger jobs, I rely on structured cabling and data and security cable from established brands like Commscope and Schellinger. They're consistent, the termination is predictable, and the performance data is reliable. That matters when you're commissioning a system and need to certify the cabling. I've had too many experiences with off-brand cable that looked good on the reel but failed the fluke test. The cost savings aren't worth the rework.

In the end, the cable is the quiet workhorse of every security and control system. It doesn't get the attention that cameras or panels do, but it determines whether the system functions as designed. Take the time to select the right cable, use quality tools, and work with a supplier who can get you what you need when you need it. That's the professional approach, and it's the one that builds a reputation you can stand behind.