

Cable

If the access control contractor installs the cable between the elevator control room and the cab, the cable must be steel-reinforced to meet local code and the elevator company's specifications. The wire gauge may be 18 AWG. Otherwise the cable may use AWID's standard cable specifications. All cable must be highest quality, 100% shielded.

Often the cable is supplied by the elevator's installers. It may be three separate cables, each cable a twisted pair and shielded. If the elevator people supply *unshielded* cable, do not attempt to use it for the proximity reader.

Wiring

Wiring between the reader and the access control panel in the elevator control room follows the standard instructions that AWID supplies in the reader's Installation Sheet. (These instructions are inserted in the carton with every AWID reader. They are available also on AWID's web site -- www.awid.com).

AWID specifies non-twisted-pair cable for readers. If existing cable *is* twisted-pair, special wiring for the Wiegand data lines must be used to prevent cross talk between the data lines and possible occasional rejected data input to the system. Do **not** run the Data-0 and Data-1 wires in the same pair of wires. You may split the data wires by pairing Data-0 (green wire) with, say, electrical ground (black wire), and Data-1 (white wire) with positive power (red wire).

Grounding

The key to success in elevator mounting of readers is the grounding. It is vital to follow good wiring practices, especially the ground connections. The reader's drain wire (the wire with clear insulation) must be connected to the cable's shield (or to the cable's drain wire, if there is one). The cable's shield must be connected to a true **earth ground** at the access control panel in the elevator control room. To prevent a ground loop circuit, do *not* also ground the cable's shield at the elevator cab.

Be careful also to ground the metal cabinet containing the access control panel and other electronics. Follow the instructions for the control panel carefully. The environment inside the elevator control room can be brutal to electronic devices.

Technical Reference

PROXIMITY READERS IN ELEVATORS

Elevators present one of the greatest challenges for installation of card readers. The environment may be electrically noisy. The presence of long steel structures, long cable runs, and high-current switched machinery may interfere with good reader performance. Here are ideas ...

Reader Location

A reader may be installed outside the elevator door, usually near the elevator call buttons, to enable the call buttons for authorized individuals. Installation of this type is identical to the typical use of readers for access control.

A reader may be installed inside the elevator cab to enable the floor buttons. AWID's proximity readers may be mounted directly on the wall or panel -- metal or non-metal. For reasons of security or appearance, building managers sometimes ask for the reader to be mounted behind the cab wall. This can be done if the wall material around the reader is not metal. In a metal wall, cut an opening that is perhaps 8 inches larger than the reader dimensions, and mount the reader behind the center of the non-metal cover material. Lucite is often used for good appearance.

The reader's effective range will be reduced by the thickness of the cover material. Range may be reduced also by the presence of metal at the sides of the reader. The reader's LED may not be visible through tinted Lucite.

Power

The power for a cab-mounted reader may come from a DC supply that is housed in the cab, or through the reader cable in the usual fashion. If DC power is fed through the cab's traveler cable, be sure to use a 12 volt supply in the elevator control room, so that voltage drop in the cable will not reduce reader performance. A cab-mounted power supply reduces the number of wires needed in the traveler cable by two.

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