PTI SECURITY SYSTEMS

PTI Wiring Specifications

WIRE & CABLE NEEDED

The following are the recommended wire types for installing PTI Security Systems manufactured products as well as many of the other access control and security products that we sell to compliment that requires a high degree of technical knowledge; we recommend that this be done by a trained professional.

AI Device Power & Data Wire Recommendation

(from Controller to AI Devices)

PTI Part #	Belden Wire Code	Ω per 1000' Resistance	Description
wwir1804s *	9418	6.92	18 AWG, 4-conductor stranded copper wire with overall shield and common ground (PVC Insulation)
wwir1804spl	89418	6.92	18 AWG, 4-conductor stranded copper wire with overall shield and common ground (Plenum Insulation)
wwir1804sdb	9552	6.92	18 AWG, 4-conductor stranded copper wire with overall shield and common ground (Direct Burial)

*Denotes standard recommended wire.

Standard CAT5 cable can be used for RS-485 data communications with this system. Be sure to correctly identify the twisted pair that will be used. A separate 18AWG power line will need to be run or dropped when using CAT5.

Never use wire smaller than 18 AWG for installing power to AI devices.
Never use any unshielded wire for installing power and data to AI devices.
Data wire length should never exceed 4000' in a single linear distance.
Maximum length for power will vary significantly because of voltage drop due to current draw, number of devices, splices, and other factors.

Door Alarm Wire Recommendation

(from Multiplexer to Door Switch)

PTI Part #	Belden Wire Code	Ω per 1000' Resistance	Description
wwir2450*	9585	25.67	24 AWG, 50-conductor solid copper wire (PVC Insulation)
wwir2450pl	N/A	25.67	24 AWG, 50-conductor solid copper wire (Plenum Insulation)
wwir2450db	165185110	25.67	24 AWG, 50-conductor solid copper wire (Direct Burial)

*Denotes standard recommended wire.

Never use wire smaller than 24 AWG for installing door switches.
Never use stranded wire for installing door switches.
Applications that require shielded truck line, use direct burial cable.

HINT

We strongly recommend that you purchase the wire for your system from PTI Security Systems as we have determined the best components after years of experience and testing.

APPLICATION

Using the incorrect wire for an application can cause many problems with voltage drop, RF interference, and ground faults; resulting in lost revenue and greatly increased cost of service, reinstallation, repair, and technical support. Always refer to local code before ordering the wire for your site, as these requirements may be more stringent.

REMEMBER

When retrofitting an existing facility, we do NOT recommend using existing wiring. New wire should be pulled and and all new connections made. Old wiring is often the source of many problems in a system and the initial investment to install new wire will improve the overall retrofit experience and reduce the probability of issues.

APPLICATION

Baluns are video signal converters that allow twisted pair cable to be used to carry video signals up to 1200 feet. Two baluns are required for each camera connection (one at the camera end and one at the DVR end). This is an efficient way to run video signal on sites with lots of cameras. Contact a PTI Security Systems Sales Representative for more information on Baluns.

Intercom Wire Recommendation

(from LEF or NEM Base Station to intercoms)

PTI Part #	Belden Wire Code	Ω per 1000' Resistance	Description
wwir1810s *	5345FE	6.92	18 AWG, 10-conductor stranded copper wire with overall shield and common ground (PVC Insulation)
wwir1804s *	9418	6.92	18 AWG, 4-conductor stranded copper wire with overall shield and common ground (PVC Insulation)
wwir1802s	8760	6.92	18 AWG, 2-conductor stranded copper wire with overall shield and common ground (PVC Insulation)
wwir2210s	9946	17.5	22 AWG, 10-conductor stranded copper wire with overall shield and common ground (PVC Insulation)

*Denotes standard recommended wire.

Never use wire smaller than 22 AWG for installing LEF or NEM intercoms. We recommend that 18 AWG be used in most installations for best results. Do not exceed 1600 feet in linear distance when using 18 AWG or 600 feet in linear distance using 22 AWG.

Camera/Video Wire Recommendations

(from DVR to Camera)

PTI Part #	Belden Wire Code	Ω per 1000' Resistance	Description
wwirsiamese *	549945	10.15/6.92	RG59U / 18 AWG, 2-conductor in same cable (PVC Insulation)
wwirsiamesepl	649948	10.15/6.92	RG59U / 18 AWG, 2-conductor in same cable (PVC Insulation)
wwirrg59u	8241	10.15	Coaxial Cable with 22 AWG core and stranded copper common ground (PVC Insulation)
wwirrg59upl	89259	10.15	22 AWG, 10-conductor stranded copper wire with overall shield and common ground (Plenum Insulation)
wwirrg59udb	8212	10.15	22 AWG, 10-conductor stranded copper wire with overall shield and common ground (Direct Burial)
wwir1802s **	8760	6.92	18 AWG, 2-conductor stranded copper wire with overall shield and common ground (PVC Insulation)
wwir2210s ***	9946	17.5	22 AWG, 10-conductor stranded copper wire with overall shield and common ground (PVC Insulation)
wwir2450 ***	9585	25.67	24 AWG, 50-conductor solid copper wire (PVC Insulation)

*Denotes standard recommended wire.
**1802S can be used for power by many types of cameras.
***2450 or 2210 can be used for interior video signal using Baluns (see Application Note).