PTI Integrated Systems
International Wire Recommendations
Technical Support Form

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International Wire Recommendations

The following are cross-reference tables of recommended wire types and the nearest international equivalents for use when installing PTI manufactured products. Always refer to local electrical codes prior to ordering the wire for your site, as these requirements may be more stringent. Whenever possible, we strongly recommend that you purchase the wire for your system from PTI as we have determined the most ideal wire over years of experience and testing. 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 costs for service, reinstallation, repair, and technical support. Planning and installing the wiring of a site is a process that requires a high degree of technical knowledge; PTI recommends that this be done by a trained professional. If you have questions, please contact your local PTI Office Technical Support Department.

PTI Remote Power & Data Cable
(Low voltage from office to Keypads, CodeXpress', APEX', Multiplexers, and Relay Boards)

American Wire Gauge (AWG)	British Standard Wire Gauge (Imperial)	Metric Wire Gauge	Cross Sectional Area (CSA)	Installation Requirements
18	19 or 18	12	2.0 mm^2	4 conductor stranded copper wire with overall shield and common ground (PVC or Plenum insulation).
16	18 or 17	14	2.5 mm^2	4 conductor stranded copper wire with overall shield and common ground (PVC or Plenum insulation).

Do not use wire smaller than 18 awg (or equivalent) for installing power and data to PTI remotes. Always use wire with an overall shield and common ground. Never use network cable or solid wire for power and data on PTI remotes.

Door Alarm
(Low voltage from Multiplexer to door switch)

American Wire Gauge (AWG)	British Standard Wire Gauge (Imperial)	Metric Wire Gauge	Cross Sectional Area (CSA)	Installation Requirements
24	24	6	1.0 mm^2	4, 12, or 25 twisted pair* solid copper wire (PVC or Plenum insulation).

Cat 3 or Cat 5 twisted pair Telephone or Network cable is acceptable for door switches. Some applications may require an overall shield and common ground. Do not use wire smaller than 24 awg (or equivalent) for installing door switches. *The number of twisted pairs varies with the number of door switches on a line.

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Intercom
(Low voltage from LEF or NEM Base Station in office to intercoms in Keypads, CodeXpress', and APEX' or to other Intercom Stations)

American Wire Gauge (AWG)	British Standard Wire Gauge (Imperial)	Metric Wire Gauge	Cross Sectional Area (CSA)	Installation Requirements
18	19 or 18	12	2.0 mm^2	2, 3, 4, or 10 conductor* stranded copper wire with overall shield and common ground (PVC or Plenum insulation).
22	22	7	1.25 mm^2	2, 3, 4, or 10 conductor* stranded copper wire with overall shield and common ground (PVC or Plenum insulation).

Do not use wire smaller than 22 awg for installing LEF or NEM intercoms. We recommend that 18 awg (or equivalent) be used in most installations for best results. Do not exceed 1600 feet (487.68 meters) in distance when using 18 awg. Do not exceed 600 total feet (182.88 meters) in distance using 22 awg. Do not run Intercom wire in same shield as power and data. *The number of conductors varies with intercom type and number of remote intercom stations.

We strongly recommend that installation and setup of any PTI equipment be done by a certified, licensed, qualified, and competent person. PTI Integrated Systems can recommend local dealers and installers, but it is up to the customer to verify their qualifications and negotiate any pricing or contracts unless PTI has been specifically contracted in writing to do so for the customer. These guidelines are subject to change without notice. With any setup or configuration, some troubleshooting and adjustment of the configuration may be required. This will differ with every installation depending on many outside and site-specific variables. This troubleshooting and configuration may include purchasing additional equipment. In no circumstances will PTI Integrated Systems be responsible for any damages either incidental or consequential based on these recommendations. All installation of electronics and electrical systems must be in compliance with local, municipal, state, and National Electrical Code. Refer to manufacturer specifications for non-PTI manufactured equipment.

Warning – Incorrect installation of electrical components can result in damage to electronics as well as personal injury.
Warning – Cross-wiring the positive and negative on the DC part of the system will damage the electronics.
Warning – Using incorrect or non-recommended wire can cause many costly, frustrating, and time consuming problems.