

Electronics Services Intrusion Control Standards

PART 1 – GENERAL

1.1 SUMMARY

- A. No Content.

1.2 REFERENCES

- A.
 - 1. NFPA 70
 - 2. NFPA 72
 - 3. NFPA 731

1.3 SYSTEM INSTALLATION

- A. Installation personnel shall be persons who are qualified and experienced in the installation, inspection, and testing of electronic premises intrusion, holdup & duress systems. Installation of systems will be supervised by University Electronics Shop personnel.
- B. Qualified personnel shall include, but not to be limited to:
 - 1. Personnel trained and certified by the equipment manufacturer.
 - 2. Personnel licensed or certified by federal, state, or local authority.
 - 3. Personnel certified by an accreditation program or industry-recognized program acceptable to the University of Delaware Facilities Department.
 - 4. Trained and qualified personnel employed by an organization listed by a national testing laboratory for the servicing of electronic premises security, holdup and duress systems.

PART 2 – PRODUCTS

- 2.1 No content.

PART 3- EXECUTION

3.1 POWER SUPPLIES

- A. All power supplies shall be installed in conformity with the requirements of “NFPA 70 National Electric Code”.

3.2 POWER SOURCES

- A. The following systems shall be required to be provided with at least two independent and reliable power sources each of which shall be of adequate capacity for the application.
 - 1. Intrusion
 - 2. Holdup and Duress

3.3 PRIMARY SUPPLY

- A. Branch circuit
 - 1. Primary (main) ac power shall be supplied from a dedicated branch circuit.
 - 2. Where applicable Primary (main) ac power shall be on building generator emergency circuit.
- B. Mechanical Protection
 - 1. Circuit disconnecting means shall have a distinctive marking, be accessible only to authorized personnel, and be identified as "PREMISES SECURITY CIRCUIT".
 - 2. The location of the circuit disconnecting means shall be permanently identified at the premises security control, access, or holdup and duress system.
 - 3. Primary power (main) supplies to equipment that include Class 2 or 3 plug-in transformers utilizing receptacles shall be mechanically secured to prevent inadvertent disconnection.
- C. Transient Voltage Surge Protection
 - 1. A transient voltage surge protection device or circuit shall be installed at or incorporated into the primary power supply for the following:
 - a. Microprocessor-based control units
 - b. Microprocessor-based subpanels
 - c. Microprocessor-based annunciators
 - d. Other microprocessor-based equipment

3.4 SECONDARY SUPPLY

- A. The secondary supply shall consist of storage batteries dedicated to the electronic premises security, holdup & duress system.

B. Capacity

1. Under maximum quiescent load (system functioning in a non-alarm condition), the secondary supply shall have sufficient capacity to operate an electronic premises security, holdup and duress system for a minimum of 4 hours and, at the end of that period, shall be capable of operating all alarm-sounding devices for 15 minutes.

C. Secondary power operation

1. Operation of secondary power shall not affect the required performance of premises security, holdup & duress systems.
2. The system shall produce the same alarm and trouble signals and indications, excluding the ac power indicator, when operating from the standby power source as are produced when the unit is operating from the primary power source.

3.5 CONTINUITY OF POWER SUPPLIES

- A. The secondary power supply shall automatically provide power to the systems within 10 seconds whenever the primary power supply fails to provide the minimum voltage required for operation.
- B. Required signals shall not be lost, interrupted, or delayed for more than 10 seconds as a result of the primary power failure.

3.6 STORAGE BATTERIES

- A. Batteries shall be permanently marked with the month and year of manufacture, using the month/year format.
- B. Batteries shall be permanently marked with the month and year of installation, using the month/year format.

3.7 WIRING

A. General

1. The installation of all wiring, cable, and equipment shall be performed in a workman like manner in accordance with "NFPA 70, National Electric Code".
2. A conductor shall be spliced or joined with a mechanical splicing device listed for this purpose.
3. Unless specifically allowed by the manufacturer's wiring specifications, low voltage electronic premises intrusion, holdup and duress wiring shall be spaced at least 51 mm (2 in.) from any conductors of any light and power circuits, unless one of the circuits is in raceway listed for the purpose.

4. Wiring and cables shall be of the appropriate gauge, strands, insulation, and electrical properties as specified by the equipment manufacturer.

B. Termination

1. Connections of conductors to terminal parts shall ensure a good connection without damaging the conductors and be made by means of pressure connectors, wire binding screws, or splices to flexible leads.
2. Conductors shall be connected to devices and to fittings so that tension is not transmitted to joints or terminals.
3. Wires and cables shall not be placed in such a manner as to prevent access to equipment.
4. Terminals for more than one conductor shall be identified and intended for the purpose.
5. Conductors under a single terminal shall be of the same gauge and composition.
6. Terminals shall be marked or color coded where necessary to indicate proper connections.
7. All raceway connections to junction boxes and at all ends of raceway or flexible raceway shall be protected from abrasion and fixed in position in accordance with "NFPA 70, National electric Code".

C. Strain relief

1. Strain relief shall be provided for wiring leaving control panels and enclosures used for wiring connections.
2. A minimum 152.4 (6 in.) service loop shall be at control panels and enclosures used for wiring terminations.
3. A minimum 152.4 (6 in.) service loop shall be at field terminations.
4. Where exposed or subject to damage, service loops shall be mechanically secured.

D. Grounding

1. All grounding shall be in accordance with "NFPA 70, National Electric Code".
2. Additional grounding shall be in accordance with manufacturer's requirements.
3. All other circuits shall be test free of grounds.

E. Labeling

1. Each conductor (Individual wire) shall receive a unique and durable wire number located inside the control, each terminal block, splice connection, device terminal and any other location where a conductor is landed.
2. Only "Brady Permasleeve" heat shrink wire markers are permitted.
3. In areas where the atmosphere is unconditioned, the wire number shall be protected with a clear heat shrink protector sleeve.

3.8 INSTALLATION REQUIREMENTS

- A.
 - 1. All intrusion, holdup & duress systems shall be hardwired to intrusion panel. Exceptions must be approved in advance by manager of Electronics Services.
 - 2. All control panel, peripheral devices, and accessories essential to the operation of the system shall be installed in accordance with the manufacturer's published installation instructions.
 - 3. Wiring to all initiating devices of an intrusion detection system shall be monitored for integrity so that the presence of an off-normal condition is automatically indicated to the user upon arming the system.
 - 4. The means of interconnecting wiring connections between initiating signaling devices and control units shall be supervised so that the occurrence of a single open in the installation wiring and its restoration to normal shall be indicated within 200 seconds.
 - 5. End of line resistors used in the supervision of circuits shall be placed at the last initiating device being supervised.
 - 6. Installed equipment with tamper switches supplied by the manufacturer shall be supervised.
 - 7. All cabinets shall be installed with a door tamper switch.
 - 8. Labeling of system devices and components may be accomplished by using a P-touch type labeling system. No hand written labels or "Sharpie" markers are permitted.

3.9 EQUIPMENT & HARDWARE STANDARDS

- A. Hardwired (Preferred - Substitutions only with prior approval)
 - 1. Intrusion Panel: Honeywell Vista-128BPT Partitioned Security System
 - a. Alarm & Signal transmission over University Network Infrastructure utilizing Lantronix UDS1100 serial server. Network connection and IP to be provided by University Facilities IT
 - 2. Minimum (1) 6160 Alpha Numeric Keypad
 - 3. Door contacts: George Risk Industries 180 Series
 - 4. Motion Detection
 - a. Commercial - Optex DX-40/60 Series
 - b. Residential - Optex MX-40PI
 - 5. OVH door contact: George Risk Industries
 - 6. Holdup switch: Amseco Husk-20
 - 7. Glass break: Honeywell FG-730

- B. Wireless (Prior approval required by Electronics Shop Manager).
 - 1. Honeywell 5800 Series peripheral device product line.
- C. Prowatch Panel security device integration
 - 1. Hardwired (See 11. A)
 - 2. Wireless (Prior approval required by Electronics Shop Manager)
 - 3. Innovonics EN4200 series add on receivers and peripheral devices.

3.10 DOCUMENTATION

- A. Contactor shall include the following documentation in bounded and labeled three ring binder with zipper ends which shall be delivered to the electronics shop manager upon final acceptance of the system:
 - 1. Manufacturer Owner's manual
 - 2. Manufacturer User instructions
 - 3. Manufacturer Programming & Installation manuals
 - 4. All peripheral devices cut sheets, installation sheets and instructions
 - 5. Manufacturer battery load calculation sheet (Copy left inside panel)
 - 6. Wire identification sheet (Copy left inside control panel)
 - 7. Vista zone list (Copy left inside control panel)
 - 8. Prowatch zone list (Copy left inside panel)
 - 9. All user & programming codes
 - 10. Contractor to provide picture of final panel installation, control wiring, and auxiliary panel location.

PART 4 - ATTACHMENTS

- 4.1 No content.

End of Section

