UBC Technical Guidelines
UBC Okanagan
November 2023 Revision

Section 28 16 00
Intrusion Detection
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1.0 GENERAL

1.1 Related UBC Guidelines

.1   Section 28 05 00 Electronic Security Systems: General Standards

1.2 Coordination Requirements

.1   UBC Electronic Systems and Campus Security and *UBCO Information Technology*

1.3 Description

.1   This section covers requirements for Intrusion Detection Systems. The Intrusion System is installed by *UBCO* Campus Security and *verified contractor*. General Requirements for this system for Consultants and Contractors are provided in Section 28 05 00 Electronic Security Systems: General Standards.

.2   These guidelines provide reference to particular types, grades and models of products. In general, the references include both generic descriptions and specific product details. These references shall not be construed as a directive to sole-source products from any particular vendor except where this is specifically stated. *For detailed information consult UBCO Security and UBCO Information security representatives.*

.3   Intrusion detection system that monitors the various alarm devices (door contacts, motion detectors, glass break detectors, duress (panic) buttons etc.) and transmits their status over voice grade telephone line or IP network, and that is enabled and disabled through devices such as keypads, card readers or key switches where necessary, shall include:
.1   Intrusion detection control panel.
.2   Intrusion detection devices.
.3   Siren horns.
.4   Intrusion detection keypads.
.5   Door position contacts.
.6   Motion detectors.
.7   Glass breaks detectors.
.8   Photo electric beams.
.9   Movable object detectors.
.10   Power transformers.

2.0 MATERIALS SPECIFICATION

2.1 Alarm Control Panel

.1   Powered from Class 2 step down transformer (typically 16VAC)
.2   Control circuitry housed in a mechanically securable box with tamper option
.3   Wall mountable
.4   Provide 12VDC for related data bus and detection devices
.5   Function in all major communication formats
.6   Support "end of line resistor" fully supervised zones
.7   Fully programmable
.8   Fully upgradeable/downloadable
.9   Multi access code/multi user
.10   Event scheduling
.11   Event logging

.12   Multi keypad
.13   Comm line supervision
.14   A/C fail supervision
.15   Low battery supervision
.16   EXPROM or non-volatile RAM memory retention
.17   Operating temperature 0 C to +40 C

2.2   Keypads

.1   12 VDC operation
.2   Two way digital data transfer to and from control panel
.3   LED arm/disarm status
.4   Back lit keys
.5   Back lit LCD alpha numeric display, *with optional configurable audible annunciation*
.6   Menu driven/user interactive
.7   Min. *5* digit code length
.8   *Equipped with onboard zone inputs*

2.3   Motion Detectors

.1   12VDC operation
.2   Alarm output dry contact N/O or Form C if required
.3   Dual detection technology (microwave and passive
.4   Noise filtering for both microwave and passive infrared
.5   White light immunity
.6   Turbulent air immunity
.7   Insect/pet immunity
.8   RIF immunity
.9   Ambient temperature compensation
.10   Operating temperature - 15C to +50 C

2.4   Audio Glass Break Detectors

.1   12VDC operation
.2   Alarm output dry contact N/O or Form C if required
.3   Microprocessor based frequency analysis
.4   Audio discrimination
.5   Processing capabilities for plate, wired, laminated, and tempered glass

2.5   Photo Electric Beams

.1   12VDC operation
.2   Alarm output dry contact N/O or Form C if required
.3   Dual infrared photoelectric beams
.4   Selectable beam frequency
.5   Selectable beam intervention time
.6   Weatherproof housing with tamper switch
.7   Operating temperature - 30C to +40C

2.6   Magnetic Contacts

.1   Hermetically sealed, corrosion proof reed switch
.2   Min. 13mm operating gap between contact and magnet

2.7   Power Transformers

.1   Fully certified Class 2 rated
.2   ULC and CSA approved
.3   Fail-safe in the event of current overload or short circuit
.4   *16VAC input, 40VA output minimum.*
.5

3.0   EXECUTION

3.1   Alarm Control Panel

.1   Device location
    .1   Panels should be mounted in communications room within the protected area. (Exact location to be confirmed by UBC IT - Connectivity Infrastructure). If it is not possible to locate the panel in the communication rooms, panel should be mounted in a secure room within the protected area. Confirm with Campus Security and *UBCO Information technology*.
    .2   Panels must not be mounted above false ceiling if space is "return air" plenum type.

.2   Wiring
    .1   All related wiring for panels should be concealed and *homerun* whenever possible.
    .2   FT4 rated wire. FT6 rated wire when required.
    .3   Wire path and dressing within communication rooms to conform with UBC IT - Connectivity Infrastructure standards
    .4   Power- transformer fed from un-switched 120VAC dedicated breaker c/w generator and/or UPS backup whenever possible.

3.2   Keypads

.1   Device location
    .1   Keypad to be wall mounted within the protected area
    .2   Standard mounting height between 1220mm and 1524mm.

.2   Wiring
    .1   6/22 FT4 rated wire. FT6 rated if required
    .2   Home run to control panel
    .3   When using conduits to conceal wire, mount keypads to double- gang boxes
    .4   When using V series wire mold to conceal wire, mount keypads to shallow double-gang boxes
    .5   Max wire length 80 meters/run unless specified

3.3   Motion Detectors

.1   Device location
    .1   Motion should be wall or ceiling mounted
    .2   Standard wall mounting height 2286mm
    .3   Motion should be corner mounted facing away from perimeter windows

.2   Wiring
    .1   6/22 FT4 rated wire. FT6 rated wire if required
    .2   Home run to control panel or keypad/expansion module where applicable
    .3   When using conduit to conceal wire, mount detector to single gang box

.4   When using V series wire mold to conceal wire, mount detector to shallow single gang box

.5   Max wire length of 80 meters/run unless specified otherwise

3.4   Audio Glass Break Detectors

.1   Device location
    .1   Wall or ceiling mounted within protected area
    .2   Standard wall mount height 2438mm
    .3   Detector should be facing perimeter glass

.2   Wiring
    .1   6/22 FT4 rated wire. FT6 rated wire if required
    .2   Home run to control panel or keypad/expansion module if applicable
    .3   When using conduit to conceal wire, mount detector to single gang box
    .4   When using V series wire mold to conceal wire, mount detector to shallow single gang box model
    .5   Max wire length 80 meters/run unless specified otherwise

3.5   Photo Electric Beams

.1   Device location
    .1   For external use mostly
    .2   Defines protected area by creating an "electronic fence"
    .3   Should be pole-mounted at a height between 610mm and 1829mm

.2   Wiring
    .1   Adhere to NF standards
    .2   6/22 FT4 rated wire. FT6 rated wire if required
    .3   Home run to control panel or keypad/expansion module if applicable
    .4   Concealed pathway
    .5   Max length of 80 meters/run unless specified otherwise

3.6   Magnetic Contacts

.1   Device location
    .1   Contact should be installed in the top of the door frame, in line with the center of the door.
    .2   Magnet should sit no more the 13mm away from contact with the door in a fully closed position.
    .3   Contact should be flush mounted and concealed in door frame whenever possible.

.2   Wiring
    .1   4/22 FT4 rated wire. FT6 rated wire if required
    .2   Home run to control panel or keypad/expansion module if applicable
    .3   When using conduit to conceal wire, the pipe should stub directly into the frame or terminate directly above frame in a single gang box
    .4   When using wire mold to conceal wire, the wire mold should stub directly into the frame or terminate directly above frame in a shallow single gang box model
    .5   Max wire length 80 meters/run unless specified otherwise

3.7   Power Transformers

    .1   Device location
        .1   Should be "wire-in" type and mounted as close to the control panel as possible, preferably in the communication room. Plug-in type under restricted circumstances.
        .2   Compatible with any 13mm punch out conduit box.
        .3   Must not be installed above false ceiling if space is "return air" plenum type.

    .2   Wiring
        .1   Adhere to UBC IT - Connectivity Infrastructure standards
        .2   2/18 FT4 rated wire. FT6 rated wire if required
        .3   Home run directly to control panel
        .4   In communication room, dress wire to cable facilities standards

END OF SECTION