UBC Technical Guidelines
UBC Okanagan
November 2023 Revision

Section 28 13 00
Access Control
Page 1 of 5

1.0 GENERAL

1.1 Related UBC Guidelines

.1 Section 28 05 00 *UBCO* Campus Security: General Standards
.2 Section 08 71 00 Door Hardware

1.2 Coordination Requirements

.1 UBC Campus Security and Secure Access

1.3 Description

.1 This section covers requirements for Access Control Systems. The Access Control System is installed by *UBCO* Campus Security and *UBCO Information Technology*. 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.

.3 Access Control System that manages and controls occupant access into buildings and/or assets, and that the arming and locking of selected entries is scheduled and controlled electronically to allow authorized user entry via card reader, keypad etc., shall include the following:
    .1 Electronic lock box
    .2 Access control panel.
    .3 Access devices.
    .4 Card readers.
    .5 Access cards.
    .6 Door position contacts.
    .7 Request to Exit motion detectors.
    .8 Hardware egress dry contacts.
    .9 Electrified locking hardware.
    .10 Power Supply - Hardware.
    .11 Power transformers.

2.0 EQUIPMENT SPECIFICATIONS AND REQUIREMENTS

2.1 Lock Box

.1 Power Raceway
    .1 *Armored* cable to enter lock box through rear cutout. Un-switched 120VAC, dedicated breaker c/w generator and/or UPS backup whenever possible.

.2 Data Raceway
    .1 Demark for Lockbox. Reference to Communications Standard Drawing ITSTD-27

.3 Device Features
    .1 Powered directly from un-switched 120VAC.
    .2 Control circuitry housed in mechanically secured lock box c/w with tamper.
    .3 Wall mounted.

.4   UBC Card compatible
.5   Minimum 32 key slot capacity. Confirm sizing with *UBCO* Campus Security and *UBCO Information Technology*.

2.2   Access Control Panel

.1   Device Location
.1   Panels to be mounted in *the 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 room, *the panel* should be mounted in a secure room within the protected area.
.2   Panels must not be mounted above ceiling if space is "return air" plenum type.

.2   Raceway
.1   Power transformer fed from un-switched 120VAC, dedicated breaker c/w generator and/or UPS backup whenever possible.

.3   Cabling
.1   All related wiring for panels should be concealed and *homerun* whenever possible.FT4 rated wire, FT6 rated if required.
.2   Wire path and dressing within communication rooms to conform to UBC IT - Connectivity Infrastructure standards.

.4   Device Features
.1   *Cabinets/enclosures shall typically be cam lockable, 20" x 24" x 6", with side-hinged door*
.2   Powered from Class 2 step down transformer (typically 16 VAC).
.3   Control circuitry housed in a mechanically securable keyed box c/w with *monitored* tamper *switch as directed*.
.4   Wall mountable.
.5   UBC Card compatible.
.6   Provide 5 Vdc to 12 Vdc for related end devices.
.7   *Power supplies shall be 16VAC in, 12VDC out, 2A fused.*
.8   Minimum two reader ports.
.9   Minimum one fully programmable per reader port.
.10   Support "end of line resistor" fully supervised zones. Processing capabilities for all major reader formats. Fully programmable or either serially via LAN. Panel to panel expandable either serially or via LAN. Windows based operating software Operating temperature 0° C to +40° C.

2.3   Card Reader

.1   Device Location
.1   To be wall mounted typically on the restricted entry side of the controlled door.
.2   Standard mounting height 915 mm AFF, disabled 760 mm if required.

.2   Raceway
.1   19 mm conduit terminated to single gang box, stub to Cable Tray.
.2   Surface Wiremold equivalent: V700 raceway to V5747-1 box.

.3   Cabling
.1   3 pair twist/strand/shield c/w drain 22 AWG FT4 rated, FT6 if required. Belden 5542FE or approved equivalent.
.2   Home run to control panel.
.3   Maximum wire length 80 meters/run unless specified otherwise.

UBC Technical Guidelines
UBC Okanagan
November 2023 Revision

Section 28 13 00
Access Control
Page 3 of 5

.4   Device Features
    .1   5Vdc to 12 Vdc operation.
    .2   Wiegand and/or other standard protocol
    .3   2-color LED status display.
    .4   Sealed weatherproof construction.
    .5   Operating temperature -40° C to +65° C
    .6   Encrypted authentication read function, 13.56 MHz.

2.4   Request-to-Exit Motion Detector (RXM)

.1   Device Location
    .1   Should be wall-mounted above the controlled door, free from conflict with exit signage*, aimed/directed to primary direction(s) of approach*.
    .2   Can be ceiling-mounted if necessary.

.2   Raceway
    .1   19mm conduit terminated to 4x4 box c/w 2 gang plaster ring, stub to Cable Tray.
    .2   Surface Wiremold equivalent: V700 raceway to V5747-2 box.

.3   Cabling
    .1   6/22 FT4 rated wire, FT6 rated if required. Belden 5504UE or approved equivalent.
    .2   Home run to control panel.
    .3   Maximum wire length 80 meter/run unless specified.

.4   Device Features
    .1   12 Vdc operation.
    .2   Alarm output dry contact N/O or Form C if required.
    .3   Passive infrared detection or microwave if required.
    .4   Noise filtering adjustable output relay time.
    .5   LED status indicator.
    .6   Insect immunity.
    .7   Fully adjustable viewing angle, vertical and horizontal.
    .8   *Integrated 90 db local door alarm sounder (Piezo buzzer) independently controlled by access control panel/system.*

2.5   Door Contacts

.1   Device location
    .1   **Frame**: Flush mounted concealed contact to be installed in the top of the door frame 305 mm from strike side edge. Frame to be provided with 25mm diameter by 38mm deep through hole c/w back box for raceway termination.
    .2   **Door**: Concealed magnet should sit no more the 13mm away from contact with the door in a fully closed position. Top of door to allow for installation of 25mm diameter by 38mm deep magnet assembly.

.2   Raceway
    .1   13mm conduit terminated to frame back box. Stub to Cable Tray.
    .2   Surface Wiremold equivalent: V500 raceway to V5747-1 box.

.3   Cabling
    .1   4/22 FT4 rated wire, FT6 rated if required. Belden 5502UE or approved equivalent.
    .2   Home run to control panel or keypad/expansion module if applicable
    .3   Max wire length 80 meters/run unless specified

.4   Device Features

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

2.6   Power Transformers

.1   Device location
    .1   Shall be "wire-in" type and mounted close to the control panel 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   Raceway
    .1   Power transformer fed from un-switched 120VAC, dedicated breaker c/w generator and/or UPS backup whenever possible.

.3   Cabling
    .1   2/18 FT4 rated wire, FT6 rated if required. Belden 5300UE or approved equivalent.
    .2   Home run directly to control panel
    .3   In communication room, dress cable to UBC IT - Connectivity Infrastructure standards

.4   Device Features
    .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.*

2.7   Power Supply – *Door* Hardware

.1   General
    .1   *UBCO* Campus Security and *UBCO Information Technology* equipment interfaces to Electrified Hardware at Power Supplies.

.2   Device Location
    .1   Power Supply shall be located in *the communications* room (exact location to be confirmed by UBC IT - Connectivity Infrastructure). Locations subject to hardware design.
    .2   *UBCO* Campus Security and *UBCO Information technology* equipment interfaces to Electrified Hardware at Power Supplies.

.3   Raceway
    .1   19mm conduit terminated directly to Power Supply enclosure. Wiremold equivalent V700.
    .2   Supply may source power to more than one Electrified Hardware Device. Subject to Hardware design.

.4   Cabling/Interface
    .1   Subject to Hardware design.
    .2   Power Supply to be equipped with "Dry Trigger" function (i.e. SDC CR4) to allow complete isolation of *UBCO* Campus Security equipment from Hardware power.
    .3   "Dry Trigger" cable: 4/22 FT4 rated wire, FT6 rated if required. Belden 5502UE or approved equivalent.

.5   Power/Features
    .1   Direct power to Supply fed from un-switched 120VAC, dedicated breaker c/w generator and/or UPS backup whenever possible.

.2   Equipped with battery backup whenever possible.
.3   Interface to Fire Alarm when required by code.
.4   *ULC listed power supplies and distribution boards.*
.5   *Dual voltage 12 or 24 VDC field selectable continuous output.*
.6   *Minimum 2A output.*
.7   *Minimum four (4) output distribution boards.*

2.8   Electrified Hardware

.1   General
　　.1   Electrified Hardware requirements and specifications are not included in this section. See Section 08 71 00 Door Hardware.
　　.2   Hardware interface requirements to *UBCO* Campus Security equipment described above, Power Supply – Hardware

END OF SECTION