Specifications for the Card Access System in Non-Residential Installations, UMass Amherst (UMA)

General Requirements

- Any deviation from the below requirements **must** be approved by UMA Card Access System Administrator, and a trained UMA card access technician.

Design and Construction

- During the project design phase, the Card Access System Administrator shall be given the opportunity to review the project, offer insight into card reader system design, as well as helping to identify the best place to locate the controlling hardware.
  - This may include requesting additional installed hardware and/or preparatory installation of EMT and J-boxes, to accommodate future system expansion.
- Changes and/or updates, to the plan/design information, and that pertain to the card access system, must be provided to the Card Access System Administrator for comment and review.

Hardware

- Door controllers, readers, and power supplies must be certified by Software House for use with the C-Cure 9000 software system.
  - UMA has identified the iStar Pro controller, 8 or 16 doors, as the campus requirement; both for ease of installation/configuration within the campus network environment, and for hardware consistency.
  - The required power supply, for all iStar Pro Controllers, is the Software House apS Advanced Power Systems power supply. Included with the power supply should be one 12-volt 18AH battery to back up the iStar Pro, and complete the iStar Pro power supply requirements.
  - The reader should be the HID R40 for standard installations, and HID R15 for slim-line installs. Deviations from this requires acceptance by UMA card access staff.
  - Hardware compatibility, and layout, must be verified and approved by UMA card access staff.
- For multi-door installations, where the door hardware requires a power supply, multi-door power supplies are to be used. For example, a panel with 16 doors installed might use a single 16-door power supply rather than 16 individual power supplies.
In applications where door hardware power supplies cannot be centrally located, door controllers shall remain in the designated central location, unless otherwise approved by UMA card access staff.

- Controllers should be installed no higher than 6 feet, and no lower than 3 feet, from the floor.
- Controllers and power supplies should be mounted on a plywood backboard that has been painted black.
- If 120VAC outlets are not present in the designated space, one single-gang box, with 2 outlets, should be installed for each controller.
- Each controller must have its own Ethernet connection, which may need to be installed in the space.
- Ethernet connections must be tied to the UMass SCADA-Control network.
- All hardware shall be configured and controlled through the campus’ current C-Cure 9000 software application. Door configuration shall be coordinated with the Campus Door Access Administrator.
- Without previous UMA card access group approval, no door shall be installed using an electro-magnetic lock system.
  - Where electro-magnetic locks are required, a secondary release button shall be wired so that, when activated, a request-to-exit signal is sent to the UMA access control system in addition to releasing the lock.
- Wherever possible, and specifically in new construction or remodel w/ door frame replacement, door hardware will use an internal request-to-exit device rather than a passive-infrared device.
- In new installations, the room that houses the door access hardware shall have a card reader to control access to said room.
- All card access installations shall have the following as minimum equipment: door status switch, request-to-exit device, and a locking device.
- Panic hardware must be powered by the manufacturer’s recommended power supply.
- Whenever possible, panic hardware power supplies will be located in the same location as the door access controller(s).
- Any low-voltage hardware, over 1 amp @ 24VDC total draw, will be furnished with the hardware manufacturer’s approved power supply.
- ACM relays should not be used to switch door strike or latch. Relays should switch the relays that control the locksets.
- Resistors/packs should be located as close to the origin of the input as possible.
- Door status switches should be wired normally ‘closed’.
- All leaves of a door must have a status switch. Even if the leaf has no visible hardware.
• For new construction, or remodels replacing the existing door and frame, current and monitor switch transfer device must be Von Duprin EPT series. Electric hinges, or door loops, will not be accepted.
• All openings equipped with card access equipment shall be, prior to completion of installation, self-closing, with no binding or rubbing on frame and/or threshold.
• Where an opening is equipped with a power assist door operator, said operator shall be connected through C-Cure software so as to utilize the Alternate Shunt (ADA) user flag.
• Any deficiencies, in these requirements, shall be corrected as a condition of project sign-off.
• All entry doors must be landed on the same controller.

Location of Controlling Hardware

• Where possible, all door related equipment (controllers, power supplies) shall be located in the same location with the following requirements:
  o A review of project designs to insure location is acceptable, and is approved by UMA card access staff.

Cabling & Wire Runs

• All low-voltage wiring shall be plenum rated cable.
• For power feed for magnetic locks and electric strikes
  o Use manufacturer’s recommended wire specifications
• For standard card access installations (reader, door position, lockset, exit device, PIR)
  o Use manufacturer’s recommended wire specifications
• When wire has been pulled, EMT should be no more than 50% full, thus allowing for future wire pulls, if necessary.
• Contractor shall leave no less than 2 pull strings, between each J-box, for future use.
• All EMT runs, from the last-in-series J-box to door, shall be enclosed in a minimum of 3/4” EMT.
• All EMT runs, from controller to first-in-series J-box, shall be enclosed in a minimum 1 1/2” EMT.
• EMT runs, between J-boxes shall be enclosed in a minimum of 1” EMT. Making sure to consider EMT contents, in order to not exceed the 50% full requirement.
• All J-boxes shall be a minimum of 4 11/16” deep box.
• Where conditions permit, conduit junctions and terminations shall be concealed.
• Concealed locations should be done with 8 inch by 10 inch metal enclosure with back plate and terminal strip.
Any and all concealed locations shall be reasonably accessible to maintenance personnel, and shall not require the modification of an opening to gain such access.

**Other**

- For new construction, all card access equipment shall be connected to emergency power.