George Mason University
Access Control Installation Standards

Panel Side:

- Only plenum rated low cable wiring may be run without conduit provided the cable is run square and plumb with the building structure.
  - Cable must be supported as per manufacturer guidelines.
- A Fire Alarm Interface is installed for any doors calling for it.
- All boards (SCP, MR52, MR16, MR50, MUX etc.) are connected to a distribution board with 12v fused and individualized power. Boards are only to have their power daisy-chained if instructed.
- A 10-15-ft Service Loop should be left above the panel. This loop should be neatly managed, secured, and labeled. There should be one service loop per door, not a collaboration.
- There should not be any service loops within the panel.
- All knockouts have been used at the top of the panels to ensure wires are neat and discernable within the covered Panduit channels.
- Cables should not be exposed outside the panel tracks except to be terminated.
- Any abnormal terminations must be verified and approved by Mason's Access Control Department.
- All composite wire should be labeled with a door number inside the Panel.
- Batteries are installed and labeled with the installation date.
- Surge protection /grounding installed properly.
- All drawings and documents were completed and submitted to Mason's Access Control Department.
- Equipment user's manuals, keys, software, etc. have been transmitted to Access Control.
- The panel tamper alarm has been installed, preferably to an SCP.
- All unused Tamper and Power Fault terminals have a jumper installed.
- All J5 Communications' have been terminated on the SIOs
- All SIOs have the Reader, Inputs, and Outputs labeled.
- All Door Contact wires have been terminated per RS2 wiring standard.
- All REX wires have been terminated per RS2 wiring standard, and any necessary power is through a fused output.
- All Output wires have been correctly terminated per RS2 wiring standards.
- All Reader power, data, and the green LED have been terminated.
- All Lock power must be on individually fused outputs on a distribution board.
- Label inputs and outputs on the distribution board.
- Panels must be mounted at serviceable height; the top of panel should not exceed 6 feet unless authorized Mason's Access Control Department.
- 120v cord must be secured to the wall.

- Enclosure cam-locks are installed, and the panel can be closed and locked.
- All unused cabling and materials have been removed from the job site.
- All trash has been discarded, floor has been swept, or vacuumed.

Door Side:
- A 5 ft service loop is left above the door and is neatly managed, secured, and labeled.
- All cables must be kept off the ceiling tiles or grids.
- All terminations should be made using Dolphin Super B Connectors. When required for heavier gauge wire terminations, use Wire Nuts with electrical tape.
- Temperature Control Modules (TCM) installed when called for.
- Locks and hinges shall be installed with enough wire slack to remove them for servicing. If the device comes with factory connectors, they should be used.

REX:
- An internal REX feature is preferred if the lock allows it.
- If using an external REX, it should be mounted level and securely with both screws fastened using anchors.
    - If REX is mounted on a sheetrock wall above a single door, it should be mounted slightly towards the latching side of the door and at a height of 8' to 10' when possible.
    - If REX is mounted on ceiling tile above a single door, it should be mounted towards the latch side of the door and approx. 10" out from the wall above the door and secured facing straight down.
    - If REX is being used for double doors, mount the REX centered on the doors.

Door Contacts:
Wiring for a single door opening should be as follows:

- Use a ¾" recessed normally closed door contact with resistor.
- A door magnet is to be mounted flush in wood or metal door directly parallel to door status.
- Center of door magnet and center of frame wired status should be no more than ¼" difference.
- Door Contact should be installed at the top of door frame 6" from latching side of frame.
- Door Contacts are not to be making physical contact when opening or closing the door.

Wiring for a double door opening should be as follows:
- Use ¾" recessed normally closed-door contacts w/resistor on both openings.
- Door Contacts should be installed at the top of door frame 6" from latching side.

- The wiring of two-door status' in a double-door scheme should be as follows:
    - The first status and second status within the double door scheme should be connected by an 18/2 or 22/2 non-shielded wire and should be wired in series.
    - Each door should report its status to the EAC (Electronic Access Control).

Reader:

- Readers' power, data, and green LED wire are connected. Any extra wires should be trimmed and taped off.
- The reader is mounted level and securely to the wall at a height of 42" to center.
- Reads cards and mobile credentials correctly.
- Reader LED color is acting correctly, Red/Card Only; Green/Unlocked; Red and Green alternating/Granted Access.
- Exterior readers are terminated with waterproof dolphins.
- All reader terminations should be taped over with electrical tape.
- Reader mounted height should be 42" on center from floor.

Electronic Strike:

- All strike cavities are cut out per manufacturers guidelines and any sharp edges are filed down.
- Temperature Control Modules (TCM) have been installed if required.
- 12 or 24VDC factory quick disconnect plugs have been installed.
- Cover plate should be used to hide any flaws on frame.
- Electronic strike has been secured to frame with manufacturers hardware.
- All strikes must receive latches properly, dead latches do not fall into the strike.

Electronic Locks:

- All door Preps are per manufacturers guidelines and any sharp edges are filed.
- All wire raceways through a door or device are per manufacturers guidelines.
- File any sharp edges.
- 12 or 24VDC factory quick disconnect plugs have been installed.
- Temperature Control Modules (TCM) have been installed properly when required.
- Cover plates shall be used on retrofit doors to cover existing installation holes.
- Electronic lock has been installed using the manufacturers hardware.

Power Supplies:

- Make sure all input wires are terminated correctly per the manufacturer's schematics

- Make sure all output wires are terminated correctly per the manufacturer's schematics
- Jumper any necessary inputs
- Appropriately jumper Mode Selection if applicable
- Appropriately jumper Time Delay Selection if applicable
- Install Surge Resistor pack in Series
- Batteries are installed properly and labeled with installation date.
- Fire Alarm Interface is installed properly.

*Any other questions concerning device installations should be forwarded to Access Control/George Mason University.