

Card In / Card Out or Free Exit 12" or 24" Housings

The Tailgate (TG) System application is for Card In / Card Out or Card In / Free Exit.

Two separate housing units are used to monitor the sensing area, **Infrared Transmitter Sensor (IRT)** housing and the **Infrared Receiver Sensor (IRR)** housing. Each housing unit consists of sensors, housing and cover. They must be mounted to the doorframe on the side opposite of the door swing. The TG system will not operate correctly on double swinging doors.

Alignment is critical with the Doorway Sensor Housing. A pair of thru-beam sensors is used to monitor direction and count of persons and objects passing through the sensing area. If the sensors are not aligned correctly, then false alarms will occur.

Wire access for the sensors to control unit interface is through 1" inch holes at the back of the sensor housing. The IRT requires a 2 conductor 22-awg cable; the IRR requires a 4-conductor 22-awg cable.

.25" inch holes are provided as mounting holes on the back of both sensor housing.

The following steps are recommended for installation of the IRT and IRR housings. It is assumed that the doorframe is square and plum. If it is not, then the sensor brackets will require adjustment to line up the sensors.

Wiring to the access control system, the door contact, the door lock, and card reader is to be completed prior to powering up the TG.

Mounting Sensor Housings

1. Refer to Figure 1 illustrating the 12 and 24 inch housings mounted to the door frame.
2. Remove the sensor housing covers. The housings are marked on the back Tailgate Transmitter and Tailgate Receiver.
3. Measure 14 inches from the floor and mark each side of the door frame. The bottom of your housings will rest on this mark.
4. Place the transmitter (IRT) on the left hand side of the door opposite the door swing. Verify that the housing does not protrude into the doorway opening.
5. Install a ¼ inch self tapping screw into the upper mounting hole of the housing and tighten.
6. With a level, adjust the housing so that it is plum vertically and level horizontally then install the remaining mounting screws. If the unit is off a minimal amount, adjustments can be made to the sensors to enable proper alignment.
7. Repeat these steps for the receiver (IRR) housing that is required to be mounted on the right hand side of the door frame opposite the door swing.

Control Board

8. Remove the control board from the shipping packaging. The Card In/Out control board consist of two units pre-wired together at the factory. The Card In / Free Exit unit consists of one control board.
9. The control board can be mounted above the door or within an equipment closet. It is recommended that the unit be placed within a ventilated enclosure in a secure area protected from the elements.

Display Plates

10. The display plates are manufactured to mount on a standard one gang electrical box and should be mounted adjacent to the card reader.
11. Card In / Free Exit units require one display plate and Card In / Card Out requires two display plates.

Wiring Terminations

12. Refer to figure's 2 and 3 for exact wiring requirements for Card In / Free Exit tailgate system or refer to figure's 4 and 5 for exact wiring requirements for Card In / Card Out tailgate system. **DO NOT APPLY POWER until all connections have been verified.**

Operation Verification (Card in / Free Exit)

13. **VERIFY JUMPER SETTINGS:** The jumpers on the control board are factory set, and should not be changed. J1 is installed, J2 & J3 are removed, J4 is at the outer position, and J5 is at the inner position. The valid card input should be a normally open dry contact.
14. **INITIAL POWER UP:** Verify that the valid entry output from the access control system is open and that the door locking mechanism is unlocked. After this is verified, apply 12 VDC to the turnstile. The main control board and sensors should power up and the green LED on the display plate should illuminate for approximately 5 seconds. After this the red LED on the control plate should illuminate.
15. **SENSOR TEST:** The sensor sets are composed of a transmitter and a receiver. The transmitters have a single red LED and do not have any adjustment potentiometers. When power is applied the red LED should illuminate.
The receivers consist of two LED's (red and green) and adjustment potentiometers. When powered and aligned the green LED should only be illuminated. The green and red LED's are only illuminated at the same time if the sensor is blocked or out of alignment.
16. **FIRST WALK THROUGH TEST:** Verify that the display plate mounted adjacent to the card reader is illuminated red. If this is so, walk through the doorway in both the entry and exit direction and verify that an alarm condition occurred in the entry direction only (buzzer and alarm contact change state). If the alarm condition occurs in the exit direction reverse the exit sensor signal wire with the entry sensor signal wire at the control board terminal strip. Walk through again to verify operation.
17. **SECOND WALK THROUGH TEST:** Present a valid card to the entry reader. The display plate mounted adjacent to the card reader should illuminate green. Walk through the doorway in the entry direction. An alarm condition should not occur. Walking through in the exit direction should not generate an alarm.

18. **THIRD WALK THROUGH TEST:** Present a valid card to the entry reader, and have two people walk through the sensing area close together. An alarm should be generated. Repeat this several times varying the distance between the two people. At some point of closeness, an alarm will not be generated. The tailgate sensitivity adjustment is provided to set the alarm distance between people (refer to Figure 2 for the tailgate sensitivity adjustment). The other potentiometers on the control board are not used.
19. **ADJUSTMENTS:** The adjustment potentiometer has 180 degrees of rotation. The maximum sensitivity is with the potentiometer set toward the programming jumpers or counterclockwise. Minimum sensitivity is with the potentiometer set away from the jumpers.
20. **INSTALL SENSOR HOUSING:** After system has been verified and adjustments made, place cover on the sensor chassis, secure the cover with the flat head screws, and insure that the sensors are aligned by repeating the walk through tests.

Operation Verification (Card in / Card Out)

21. **VERIFY JUMPER SETTINGS:** The jumpers on the control board are factory set, and should not be changed. J1 is installed, J2 & J3 are removed, J4 is at the outer position, and J5 is at the inner position. The valid card input should be a normally open dry contact.
22. **INITIAL POWER UP:** Verify that the valid entry output from the access control system is open and that the door locking mechanism is unlocked. After this is verified, apply 12 VDC to the turnstile. The main control board and sensors should power up and the green LED on the display plate should illuminate for approximately 5 seconds. After this the red LED on the control plate should illuminate.
21. **SENSOR TEST:** The sensor sets are composed of a transmitter and a receiver. The transmitters have a single red LED and do not have any adjustment potentiometers. When power is applied the red LED should illuminate. The receivers consist of two LED's (red and green) and adjustment potentiometers. When powered and aligned the green LED should only be illuminated. The green and red LED's are only illuminated at the same time if the sensor is blocked or out of alignment.
23. **FIRST WALK THROUGH TEST:** Verify that the display plates mounted adjacent to each of the card readers is illuminated red. If this is so, walk through the doorway in both the entry and exit direction and verify that an alarm condition occurred in both directions (buzzer and alarm contact change state).
24. **SECOND WALK THROUGH TEST:** Present a valid card to the entry reader. The display plate mounted adjacent to the card reader should illuminate green. Walk through the doorway in the entry direction. An alarm condition should not occur. Repeat this procedure for the exit side card reader. If an alarm condition occurs in the entry direction repeat the procedure and in the exit direction. If the alarm condition occurs again reverse the exit sensor signal wire with the entry sensor signal wire at the control board terminal strip. Walk through again to verify operation.
25. **THIRD WALK THROUGH TEST:** Present a valid card to the entry reader, and have two people walk through the sensing area close together. An alarm should be generated. Repeat this several times varying the distance between the two people. At some point of closeness, an alarm will not be generated. The tailgate sensitivity adjustment is provided to set the alarm distance between people (refer to Figure 4 for the tailgate sensitivity adjustments). The other potentiometers on the control board are not used. Repeat this procedure in the exit direction, the tailgate sensitivity is separate between entry and exit.

26. ADJUSTMENTS: The adjustment potentiometer has 180 degrees of rotation. The maximum sensitivity is with the potentiometer set toward the programming jumpers or counterclockwise. Minimum sensitivity is with the potentiometer set away from the jumpers.
27. INSTALL SENSOR HOUSING: After system has been verified and adjustments made, place cover on the sensor chassis, secure the cover with the flat head screws, and insure that the sensors are aligned by repeating the walk through tests.

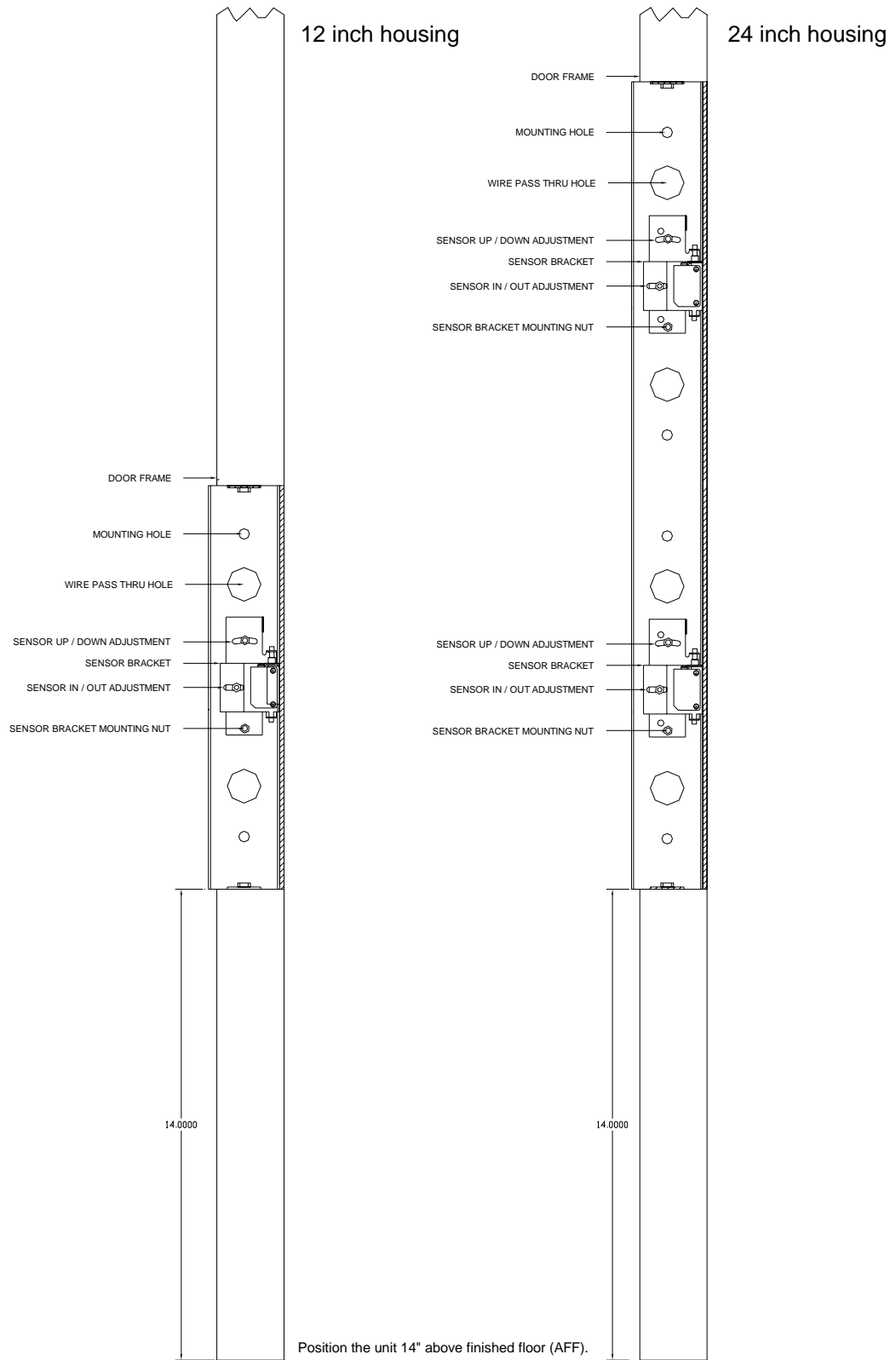


Figure 1

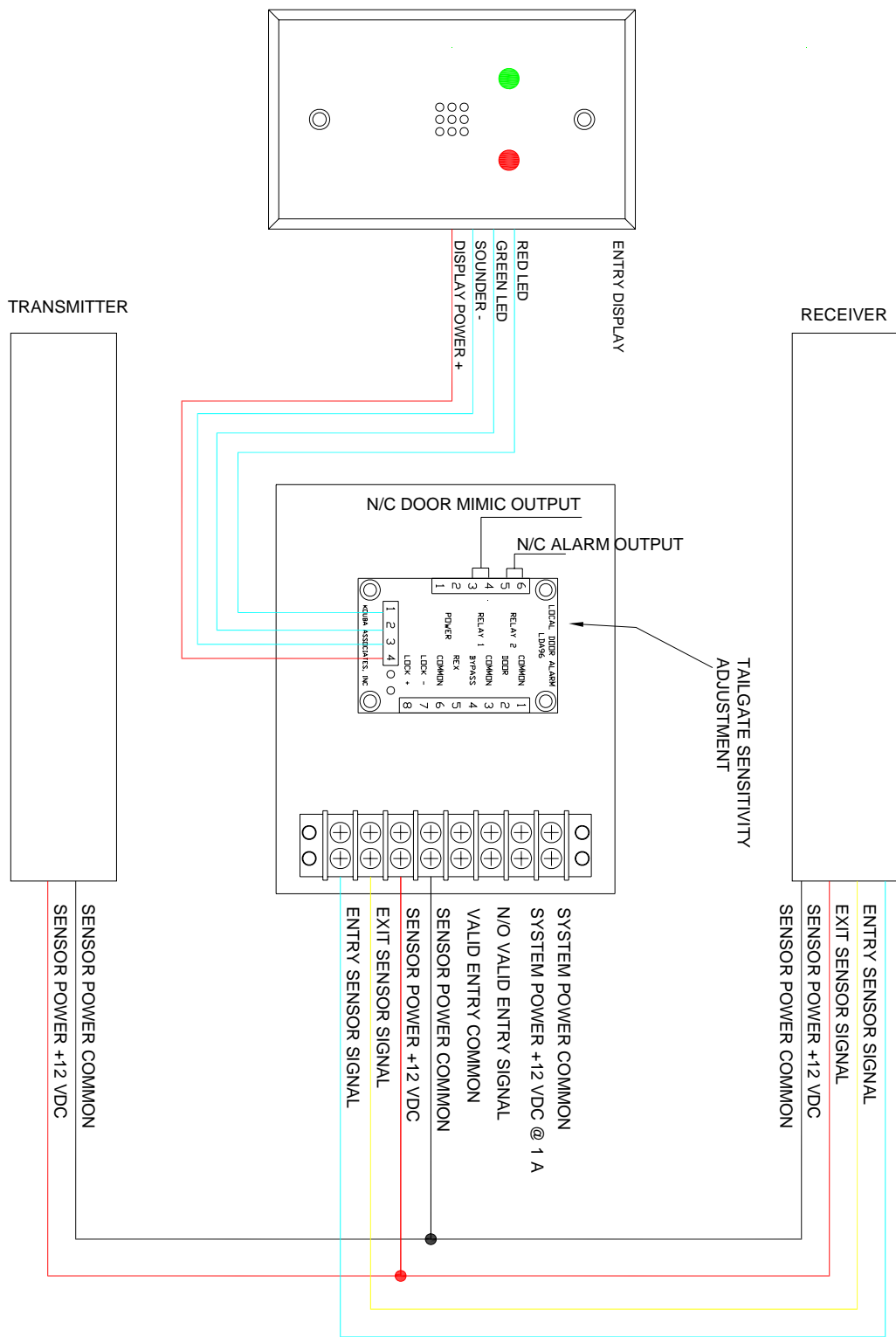


Figure 2 (Card In / Free Exit Sensor and Display Terminations)

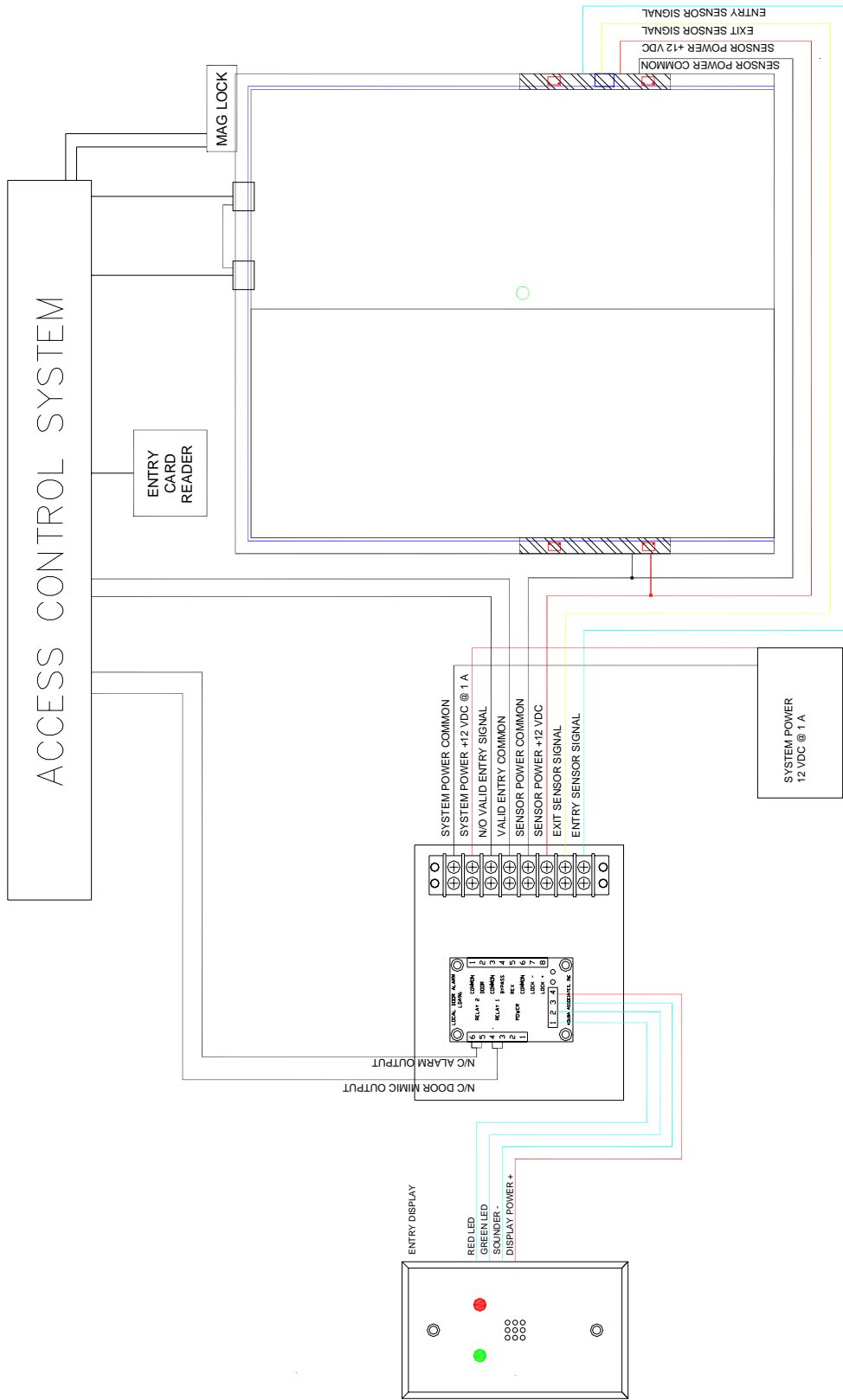


Figure 3 (Card In / Free Exit System Terminations)

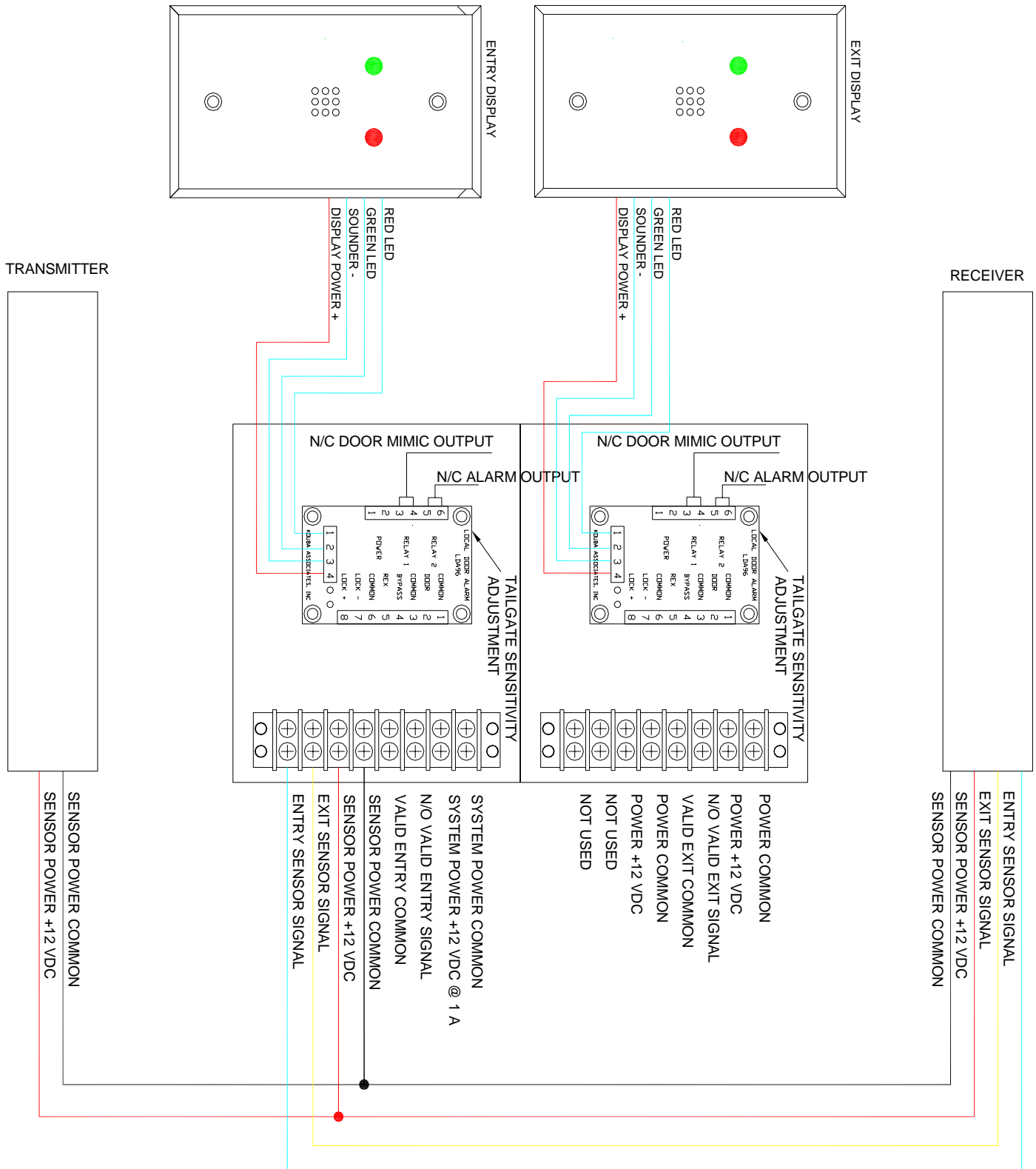


Figure 4 (Card In / Card Out Sensor and Display Terminations)

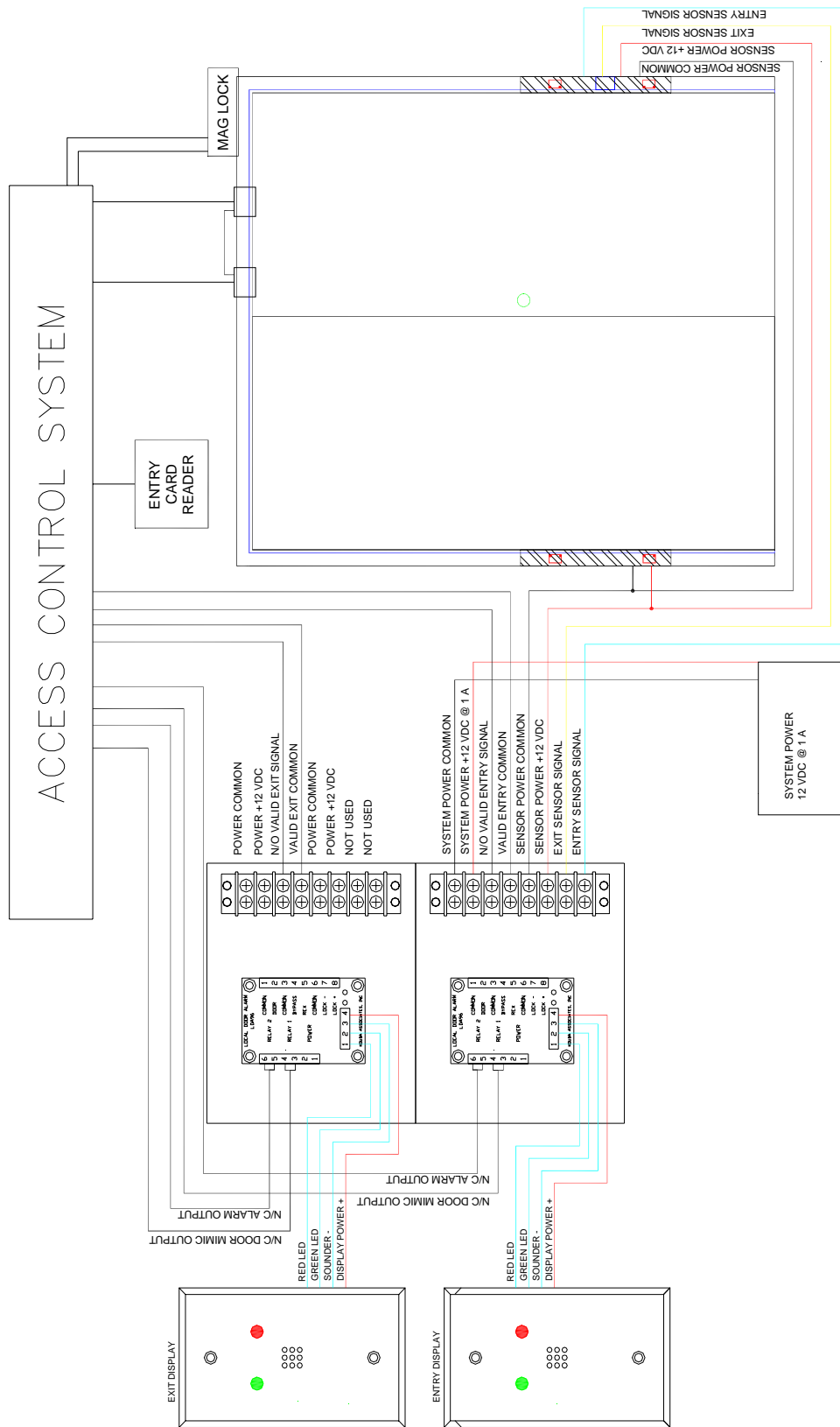


Figure 5 (Card In / Card Out System Terminations)