Access Control 10.3 Built-in NIC Installation Guide

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Vermont Systems, Inc.

12 Market Place

Essex Junction, VT 05452

www.vermontsystems.com

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License – Maintenance Agreement

The use of this software requires a VSI license and annual maintenance agreement. Prior to implementing any process outlined in this document, please contact the Vermont Systems Sales department at 1-877-883-8757 to verify that you are authorized to use this software or to obtain a quote and approval.

Section 1: Access Control Hardware Options

For RecTrac 10.3 & Under integrated hardware options:

1 **Indoor Only** - Honeywell MS3480/MS3580, MS4980, MS7580, and MS7120, MS7625, and Datalogic 1100i Omni-Directional Bar Code Scanners. The MS3580, MS7120, MS7580, and 1100i have stands that are mounted on top of turnstiles or counters and on door walls; the MS3480 and MS4980 are housed in VSI supplied protective enclosures or customer designed stands; and, the MS7625 is mounted on the counter or on wall. While these readers are recommended for indoor use only, there may be outdoor situations where they might work. If outdoor, the units must be protected from direct rain and sunlight. All scanners connect to a 7000 Reader Interface Board that provides connectivity to the network and the door, turnstile, or gate. The MS3580 is identical to the MS3480, except that it has a mounting stand and does not use an enclosure.

   Proceed to Section 2 if using this option.

2 **Indoor/Outdoor** - Smart J Bar Code Slot Reader with built-in connectivity to the network and the door or turnstile for indoor and weatherized outdoor use.

3 **Indoor/Outdoor** - Smart J MagStrip Slot Reader with built-in connectivity to the network and the door or turnstile for indoor and weatherized outdoor use.

4 **Indoor/Outdoor** - Smart J Proximity Reader with built-in connectivity to the network and the door or turnstile for indoor and weatherized outdoor use.

5 **Indoor/Outdoor** - qSCAN Bar Code Reader with built-in connectivity to the network and the door, turnstile, or gate for indoor and weatherized outdoor use.

   Proceed to Section 3 if using any option 2 through 5.

Section 2: MS3480/MS3580/MS7120/MS4980/MS7580/MS7625/DL1100i & 7000 RIB Installation Checklist

The MS3480 and MS4980 options include enclosures (# 2 below), while the other options do not, as they are mounted on stands:

1 MS3480, MS3580, and MS7120 Bar Code Scanners and a POT Serial Cable with RJ10/9-Pin Female, Part # 54000B-N-3. The round RJ10 adapter connects to the scanner and the 9-pin female adapter connects to the 7000 board via a Null-Modem Gender Changer that will be enclosed in the 7000 box. The MS3480 is installed with the enclosure, Part # _____, as listed in # 2 below.

   MS4980 Bar Code Scanner and a POT Serial Cable with RJ10/9-Pin Female, Part # _____.The round RJ10 adapter connects to the scanner and the 9-pin female adapter connects to the 7000 board via a Null-Modem Gender Changer that will be enclosed in the 7000 box. The MS4980 is installed with the enclosure, Part # _____, as listed in # 2 below.

   MS7580 Bar Code Scanner and a POT Serial Cable with DB9-Pin Female, Part # 5S-5S000-3. The round RJ10 adapter connects to the scanner and the 9-pin female adapter connects to the 7000 board via a Null-Modem Gender Changer that will be enclosed in the 7000 box.

   MS7625 Bar Code Scanner and a POT Serial Cable with DB9-Pin Female, Part # 5S-5S000-3. The round RJ10 adapter connects to the scanner and the 9-pin female adapter connects to the 7000 board via a Null-Modem Gender Changer that will be enclosed in the 7000 box.

   DL 1100i Bar Code Scanner and a POT Serial Cable with RJ10/9-Pin Female, Part # _____. The round RJ10 adapter connects to the scanner and the 9-pin female adapter connects to the 7000 board via a Null-Modem Gender Changer that will be enclosed in the 7000 box.

2 MS3480 OKW Terminal Enclosure, plastic Part # B4013117, with Clear Cover, Part # B4013621, and metal Mounting Plate, Part # B4113147. The enclosure box will also include plastic bags with a seal for the cover, four threaded bolts to secure the cover to the enclosure, and two screws to secure the enclosure to the mounting plate. In a separate package, VSI will provide Velcro to mount the scanner inside the enclosure. The customer will be responsible for securing the mounting plate to the door wall or the turnstile and for drilling a hole through the wall or turnstile, so that the serial cable can pass through to connect to the 7000 RIB. The scanner will be mounted inside the enclosure prior to mounting the enclosure on the door wall or turnstile.

MS4980 OKW Terminal Enclosure, plastic Part # _____.

3 IBC 7000-P1 Reader Interface Board that is mounted inside a metal enclosure. The box will also include the M/M Null-Modem Gender Changer listed in # 1 above. The 7000 is connected to the scanner via the 9-pin serial cable and to the network switch or router via a Cat5 RJ45 Ethernet cable. Generally, the 7000 RIB will be placed inside the turnstile or wall (or ceiling above door).

Follow the access control checklist to verify, install, configure, and test the MS3480/MS3580, MS7120, MS4980, MS7580, and DL1100i Omni-directional scanners and 7000 access control hardware and VSI software. Follow the MS3480 instructions for the MS3580, except for those relating to the enclosure and red/green lights.

1 Unpack the hardware boxes and verify the hardware sales quote with the purchase order and the actual hardware received. If correct, proceed to step 2. If incorrect, contact VSI to discuss and correct discrepancies before proceeding. Do not connect the serial cable to the MS3480 scanner yet.

2. Facing the OKW enclosure interior with the thick end down, you will see the interior flat plastic mounting area. Install 2”x2” Velcro, so that scanner surface is evenly aligned with the clear plastic cover cutout. Then stick the matching 2”x2” Velcro on back of the MS3480 scanner.

3. Facing the back side of the enclosure, you will see two indented slots where the two mounting plate prongs fit into. On the bottom surface next to the two indented areas, drill two small 1/16” holes about 1/16” from the edge, so that when the mounting plate is attached to the enclosure, the two screws will hold the two mounting plate prongs in place. Don’t insert the two screws yet.

4 Insert the RJ10 end of the serial cable through the enclosure hole from the rear and connect it to the MS3480 scanner.

5 Install the enclosed red light and green on the clear plastic cover and direct the wires through the cutout opening on the back side of the enclosure when you screw the cover to the enclosure.

6 Mount the scanner inside the enclosure by matching the two 2”x2” Velcro pieces. You may have to use two sets of Velcro to raise the face of the scanner close to the cover and parallel with it.

7 Insert the rubber seal around the outside groove of the enclosure. Next, mount the clear cover over the enclosure, while being careful to ensure that the seal is in place. Locate the small plastic bag that contains four screws to attach the clear cover to the enclosure (two screws about 1.5” long and two about 1” long). Insert the four screws from the rear into the clear cover and tighten.

8 Determine where you want the scanner to be located on the turnstile or wall and install the mounting plate with the two prongs pointing down. Using the three holes in the mounting plate, firmly secure it to the turnstile or wall.

9 Drill a hole through the turnstile or wall big enough to allow the 9-pin end of the serial cable to fit through, and then push the cable through the hole.

10 Connect the four wires from the red and green lights (2 each) to the four wires encased in one shield that will be connected to the 7000 RIB.

11 Now attach the enclosure to the mounting plate and insert the two small 3/8” screws into the two holes at the bottom of the enclosure to secure the enclosure to the mounting plate.

12 Place the 7000 RIB inside the turnstile or wall (or possibly in the ceiling) and connect the 9-pin serial cable with the gender changer to the 7000. Also connect the four red/green light wires to the 7000 following the directions on the enclosed diagram.

13 Next connect the RJ45 Ethernet cable to the 7000.

14 Connect the 2-connector wire that was enclosed with the 7000 to the 7000 Relay slots and the other end to the turnstile or door strike following the diagrams and instructions in the IBC documentation provided.

15 Disable the firewall software on the workstation that will be used to configure the 7000 device.

16 Configure the 7000 devices using the ICBTCP44 program discussed in Section 4 of this document.

17 Label each 7000 device with its appropriate IP address.

18 Prepare a list of the IP addresses that were assigned to the 7000 devices. This list of IP addresses must be maintained by the customer and both the customer and VSI must file it for reference.

19 If using bar code access control, configure the 7000 RIB and MS3480/MS3580/MS7580 by swiping the set % preamble barcodes found in the MS3480/MS3580/MS7580Configuration Guide, as well as in section 9 of this document. To do so, VERY carefully scan each barcode in the series, so as not to scan the barcodes in the wrong order. (The MS3480 scanner is an Omni-directional scanner, and therefore quite sensitive.)

In addition you must press and hold and configuration button on the top of the MS7580 unit while configuration bar codes are being scanned.

20 Install all hardware in the access panel according to the directions contained in Section 6 of this document.

21 If you are installing a 7000 RIB, connect the device wires to the door strike or turnstile using the detailed diagram shown later in this document.

23 Run the Connectivity Test described in the Section 10. You must perform this test for each access point. If needed, contact VSI for assistance. This test is required to ensure connectivity has been established outside of the RecTrac application prior to implementing Access Control from within it.

24 If VSI is providing on-site installation, configuration, and training services, then VSI will schedule the on-site visit only after you have confirmed that all of the devices were successfully tested using the Connectivity test.

25 If VSI is not providing on-site installation, configuration, and training services, perform these tasks using the Access Control Setup in RecTrac, Section 11 in this document.

26 Review the processing instructions contained in the Access Control Daily Processing Section 12 in this document.

27 Communication to and from the device occurs using TCP port 57 by default. In certain installations where firewalls are running, it may not be possible to connect to the default port. Either make sure this port is open, or during the configuration of the device, change the Reader Data Port to a port that's open.

28 Test the RecTrac configuration and verify that the complete system is working correctly.

Section 3: Smart J/qSCAN Access Control Installation Checklist

Follow this checklist to verify, install, configure, and test the access control hardware and VSI software.

1 Unpack the hardware boxes and verify the hardware sales quote with the purchase order and the actual hardware received. If correct, proceed to step 2. If incorrect, contact VSI Customer Support to discuss and correct discrepancies before proceeding.

2 If VSI is responsible for installing, configuring, and testing the hardware and software, continue to step 7 below. VSI staff will perform steps 3–6.

3 *Disable* the firewall software on the workstation that will be used to configure the Smart J/Sprox J or qSCAN device.

4 Configure the Smart J/Sprox J/qSCAN devices using the ICBTCP44 program discussed in Section 4 of this document.

5 Label each Smart J/Sprox J/qSCAN device with its appropriate IP address.

6 Prepare a list of the IP addresses that were assigned to the Smart J/Sprox J/qSCAN devices. This list of IP addresses must be maintained by the customer. The customer and VSI must file it for reference.

7 Scanner Configuration:

- If using Smart J bar code access control, configure the Smart J by swiping the **set % preamble** found in the Smart Slot J Series commands document, as well as in Section 8 of this document. To do so, fold the paper so that the bar code will be read as it is swiped through the slot reader. Optionally, you can print a Smart J Configuration Card directly to a PVC card using the Template at the very end of this document, if desired.

Note: VSI recommends a buffer of ½" around the ends of the barcode.) An audible signal confirms that the bar code has been read and the device has been properly configured.

- If using qSCAN bar code access control, configure the qSCAN by scanning the **% UX0460** command response found in the qSCAN Series commands document, as well as in Section 8 of this document.

Install all hardware in the access panel according to the directions contained in the *Access Control Hardware Installation,* Section 3 in this document. Also refer to the section titled *Access Control Diagrams in S*ection 4 for wiring diagrams.

8 Connect the device wires to the door strike or turnstile using the detailed diagram in the Access Control Diagrams section.

- Sprox J
- Smart J
- qSCAN

9 Contact VSI Support to run the Connectivity test described in Section 10. You must perform this test for *each* access point. This test is required to ensure connectivity has been established outside of the RecTrac application prior to implementing Access Control from within it

10 If VSI is providing on-site installation, configuration, and training services; then VSI will schedule the on-site visit only after you have confirmed that all devices were tested successfully using the Connectivity test.

11 If VSI is not providing on-site installation, configuration, and training services; perform these tasks using the *Access Control Setup in RecTrac* as outlined in Section 11.

12 Review the processing instructions contained in the *Access Control Daily Processing,* Section 12 in this document.

13 Communication to and from the Smart J/Sprox J/qSCAN device occurs using TCP port 57 by default. In certain installations where firewalls are running, it may not be possible to connect to the default port.

- Ensure this port is open

  OR

- During the configuration of the device, change the Reader Data Port to a port that is open.

14 Test the RecTrac configuration and verify that the complete system is working correctly.

Section 4: Configuring the IBC 7000 Reader Interface Board

By default, all physical IBC 7000 Reader Interface Board (RIB) are shipped to VSI with the following default settings for the jumpers:

- Jumpers 1-6, 8, and 10 are IN.

Note for MS7580: If you are using the MS7580, you must remove Jumpers 6 and 8, and add Jumper 9. Jumpers 1-5 and 9-11 should be IN. This will put 12v on the db9 Connector of the RIB 7000 board, which is the reason for the custom cable.

- The “ABA” Jumper is IN. (This jumper is NOT labeled but is next to a label that reads “ABA.”) The “ABA “jumper setting is crucial to Power Over Ethernet (PoE).

“ABA” Jumper Setting for Power Over Ethernet (PoE)

- IF you are using PoE, the “ABA” jumper MUST be IN.
- If you NOT using PoE, the “ABA” jumper MUST be OUT.

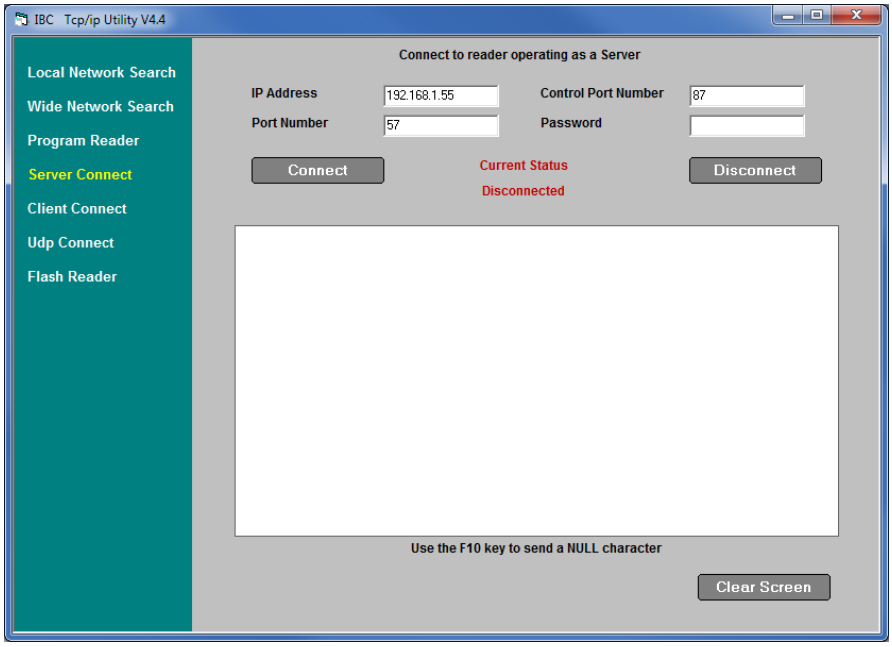
IBC 7000 RIB Configuration

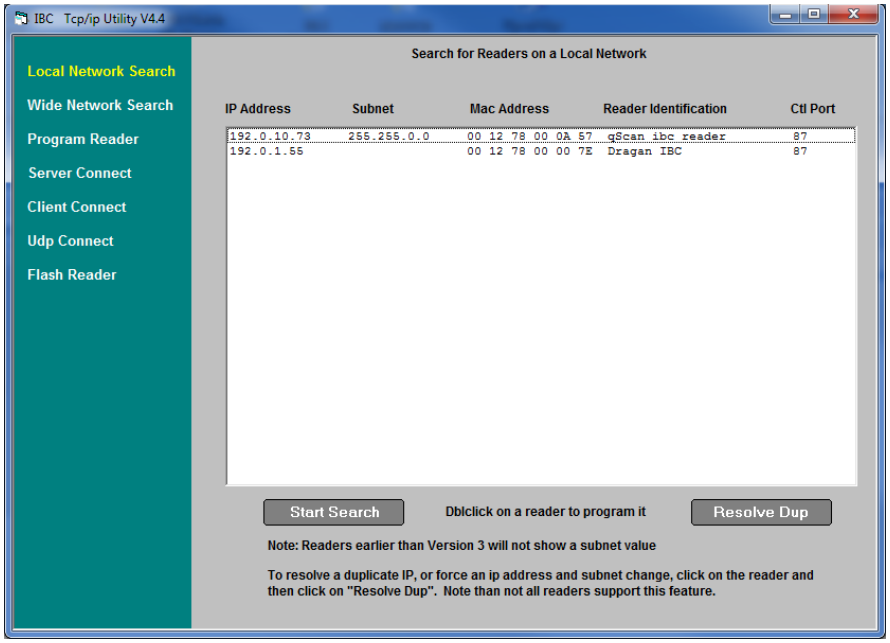
1 Download the Icbtcp44 utility. This software can be downloaded at www.interbar.com . Click on the **Software** link. Click on the **Tcp Utility V4.4** link. Select to **Save** the file and chose where you want to save it. After the download is complete, browse to the location where you saved the Icbtcp44.zip file; unzip it. The zip file will extract a setup.exe file. Run setup.exe. Follow the on-screen instructions during the installation process. This will install the Icbtcp44 software on your computer.

2 Connect the PoE Ethernet cable to the board, and then go to Start • Programs • IBC, to run the IBC TCP Utilit V4.4.

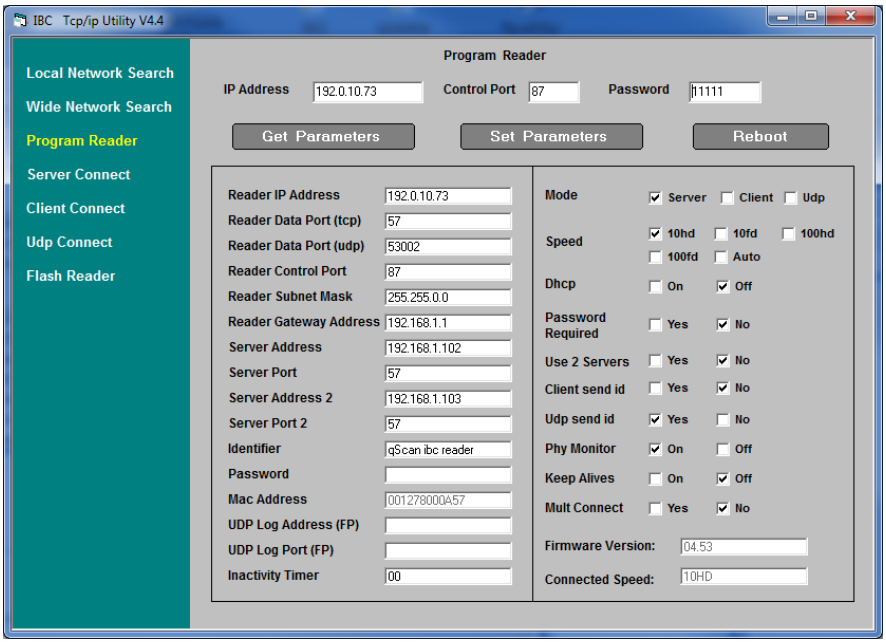
Note: If you are NOT using POE, connect the 9volt 300ma output power supply to the board.

3 Click **Local Network Search**. Press **F1 Start Search**. You should see the default IP address of the 7000 RIB, the MAC address of the reader, the Reader Identification and the Ctrl Port. You will see the following screens:





4 Double click on the first device listed. This will display the Program Reader screen. In the **IP Address** field, enter the IP address of the first device if it is not already filled in. Do not change the value of the **Control Port** and the **Password** (password = 11111). If the **Control Port** field is blank, enter **87**. Click **Get Parameters**.



6 Change the **Reader IP Address**, the **Reader Subnet Mask** and the **Reader Gateway Address** (if applicable) to values determined by your Network Administrator. Enter a unique name in the **Identifier** field to identify this specific 7000 RIB.

7 Set the **Operating Mode** to *Server*.

8 Set the **Speed** to *Auto*.

9 Set the **Dhcp** option to *Off*.

10 Set the **Password required for Data Transfer** to *No*.

11 Ensure that the IP Address in the **Server Address** field is *the same* as the IP Address in the **Reader IP Address** field.

12 Click **Set Parameters**. Once the new parameters are saved you will receive the following message: "New Parameters have been set – You must Reboot (or repower) the reader for the new parameters to take effect."

Click **OK**.

13 Click **Reboot**. Click **OK**.

14 If using bar code access control, configure the device by swiping the **set % preamble barcodes** found in section 9 of this document. An audible signal confirms that the bar code has been read and the device has been properly configured.

15 Repeat steps 6–16 for each device.

Section 4A: OKW MS3480 and MS4980 Scanner & Enclosure Units for Use with the IBC7000

When you purchase an IBC7000 Reader Interface Board, you will also purchase a MS3480, MS3580, MS4980, or MS7580. If you purchase the MS3480 or MS4980, you will also purchase an enclosure to house the scanning device which triggers the board when a card or key fob is swiped. An external power source will also be purchased to help power the strike and LED lights. The following offers basic instruction for assembling the unit as well as suggestions for ease of operation.

Wiring diagrams for these units as well as connection diagrams to the IBC7000 and external power source appear on pp. 14-15.

Note: Jumper 11 on the IBC7000 must be ON in order to use the MS3480 or MS4980 Scanner with the LED lights as detailed on the connection diagrams. An external power source is required. See the wiring diagrams on pp 14 - 15. This is also true if you are using the MS4980 ***without*** POE.

OKW MS3480

Assembling the Unit

1. Position the top (clear) panel of the housing unit so that the two (2) circular holes are at the top. Position the bottom (hard plastic) panel of the housing unit so that the pre-drilled hole is near the top.
2. Insert the red light down into the left-hand hole and the green light into the right-hand hole. The LED lights will snap or screw into place. Run the wires through the hole in the bottom panel.
3. Position the Metrologic MS3480 scanning unit on the foam pad so that the word *Metrologic* appears upside down pointing toward the top of the unit and the red scanning pane is positioned under the pre-cut opening on the top panel. Run the cord through the hole in the bottom unit.
4. Secure the top and bottom panels by tightening the screws in the bottom panel with an Allen wrench.
5. Connect one wire from the red LED and one wire from the Green LED into Ground on the IBC 7000 board using the 4-wire extension.
6. Connect the other wire from the Red LED into 'Normally Closed.'
7. Connect the remaining wire from the Green LED into 'Normally Open.'

Note: Refer to the wiring diagram on page 16 if necessary.

8. Position the unit as desired within your facility. VSI recommends that the OKW MS3480 unit be used indoors only.

Caution! Placing the MS3480 in an area where it will be subject to direct sunlight will have a negative impact on the unit's ability to read barcodes and may result in permanent damage, if not covered.

Using the Unit

For the most consistent swiping, instruct your patrons to swipe their ID Card or key fob two to four inches (2-4") away from the red scanning panel.

OKW MS4980

Assembling the Unit

1. Program the % preamble prior to placing the MS4980 unit into the enclosure. Press the Manual Scan button on the device to enable Configuration Mode.
2. Once in Configuration mode, scan the following barcodes to get a % preamble:

1. Enter Program Mode

999999

4. Programmable Prefix 1

8035370

5. Exit Program Mode

999999

3 Position the bottom panel of the housing unit so that the pre-drilled hole is near the top.

4 Slide the clear red plastic window piece into grooves for it on the bottom of the bottom panel of the housing.

5 Insert the red light down into the left-hand hole and the green light into the right-hand hole of the front panel of the housing. The LED lights will snap or screw into place.

6 Position the Metrologic MS4980 scanning unit on the Velcro in the bottom panel so the scanning end is flush with the clear red plastic window. Run the cord through the hole in the bottom unit.

7 Place the top panel of the housing onto the bottom panel of the housing making sure to slide the clear red plastic window into the top panels matching grooves. Run the LED wires through the hole in the bottom unit.

8 Secure the top and bottom panels by tightening the screws in the bottom panel.

9 Connect one wire from the red LED and one wire from the Green LED into Ground on the IBC 7000 board.

10 Connect the other wire from the Red LED into 'Normally Closed.'

11 Connect the remaining wire from the Green LED into 'Normally Open.'

Note: Refer to the wiring diagram on page 17 if necessary.

12 Position the unit as desired. The MS4980 can be used indoors or outdoors.

Caution! Placing the MS4980 in an area where it will be subject to direct sunlight might have a negative impact on the unit's ability to read barcodes, as the temperature inside the enclosure might exceed the maximum 104 DF and may result in damage. VSI recommends placing the unit in an area NOT subject to direct sunlight. If that is not an option, VSI recommends housing the unit under some form of constructed shelter.

Using the Unit

For the most consistent swiping, instruct your patrons to swipe their ID Card or key fob two to four inches (2-4") away from the red scanning panel. For best results, mount the unit upside down so that patrons swipe their cards (bar code up) under the scanner instead of over it.

Section 5: Configuring a Smart J/Sprox J/qSCAN Device

1 Download the Icbtcp44 utility.

- Open a web browser and go to www.interbar.com .
- Click on the **Software** link. Click on the **Icbtcp44** link.
- Select to **Save** the file and chose where you want to save it.
- After the download is complete, browse to the location where you saved the Icbtcp44.zip file; unzip it. The zip file will extract a setup.exe file.
- Run setup.exe. If possible, right-click on the setup.exe and choose **Run as Administrator**.
- Follow the on-screen instructions during the installation process. This will install the Icbtcp44 software on your computer.

2 To configure the Smart J/Sprox J/qSCAN device, a straight through cable connection between the workstation and the Smart J/Sprox J/qSCAN device is required. Ensure that you establish connection on the same workstation on which you installed the Icbtcp44 software. Also ensure the Smart J/Sprox J/qSCAN device is connected to a power outlet.

3 In Windows, launch your command prompt. At the prompt, type: *ping 192.168.1.58*

- If you get the message “Request timed out,” continue to step 4.
- If you get a valid response, change the number *58* to a number other than 58 but less than 255 and try the command again. Continue this test, changing the number, until you get the "Request timed out" message.
- Once you get the response “Request timed out,” note the entire IP address and use this as the IP address in the next step instead of 192.168.1.58.

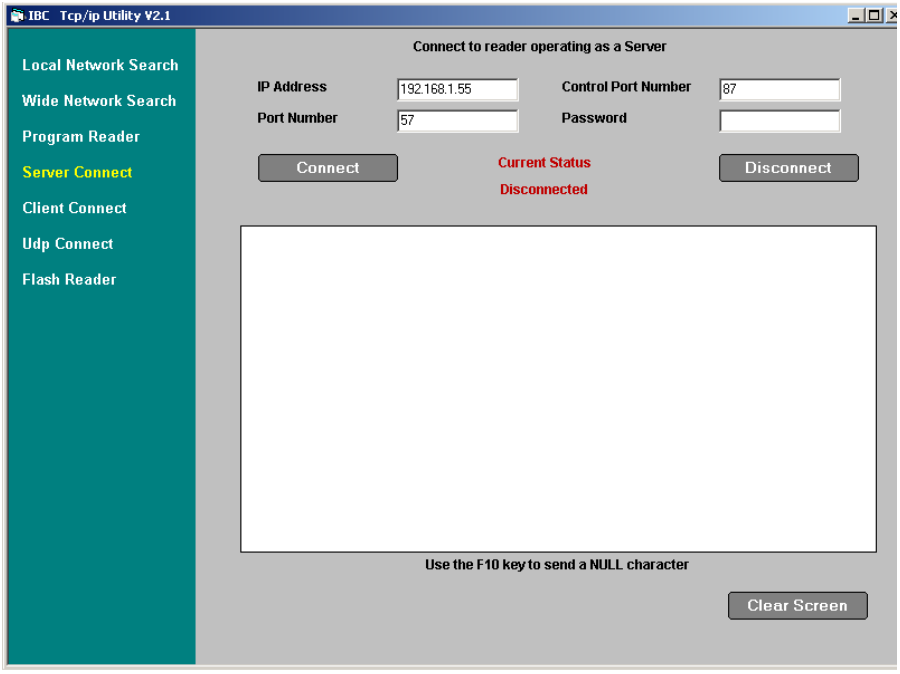
4 Change the TCP properties on the workstation to the following:

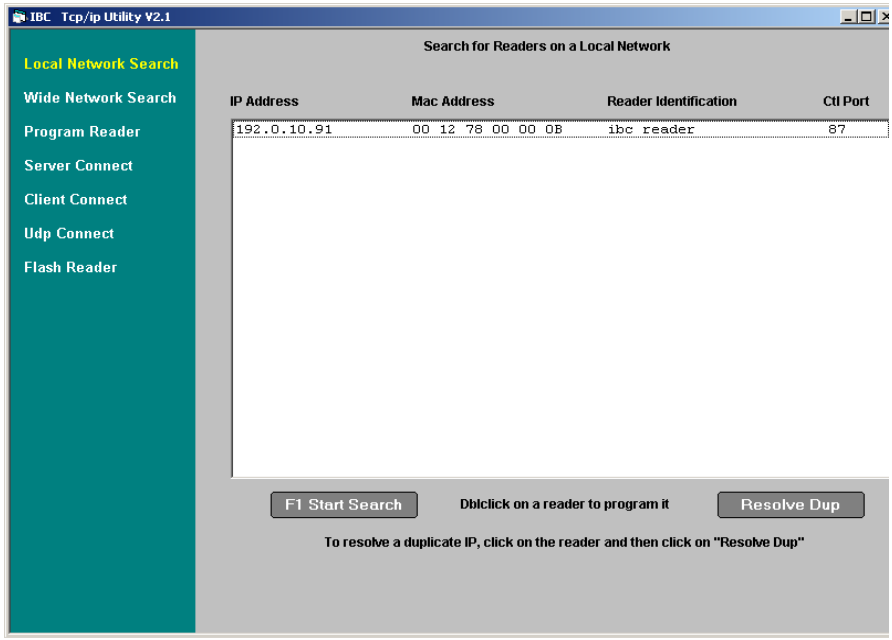
- Select the option to **Use the following IP address**.
- In the **IP address** field enter *192.168.1.58**
- In the **Subnet mask** field enter *255.255.255.0*
- In the **Default gateway** field enter *192.168.1.102*
- Click **OK**.

***Note**: IF you received a valid response using 192.168.1.58 in step 3 bullet 2 above, enter the alternate IP Address as described in the Step 3, bullet 3.

5 If you are installing multiple devices, prepare an organized listing of IP addresses and locations that correspond to each device. After configuring each device, be sure to label each clearly.

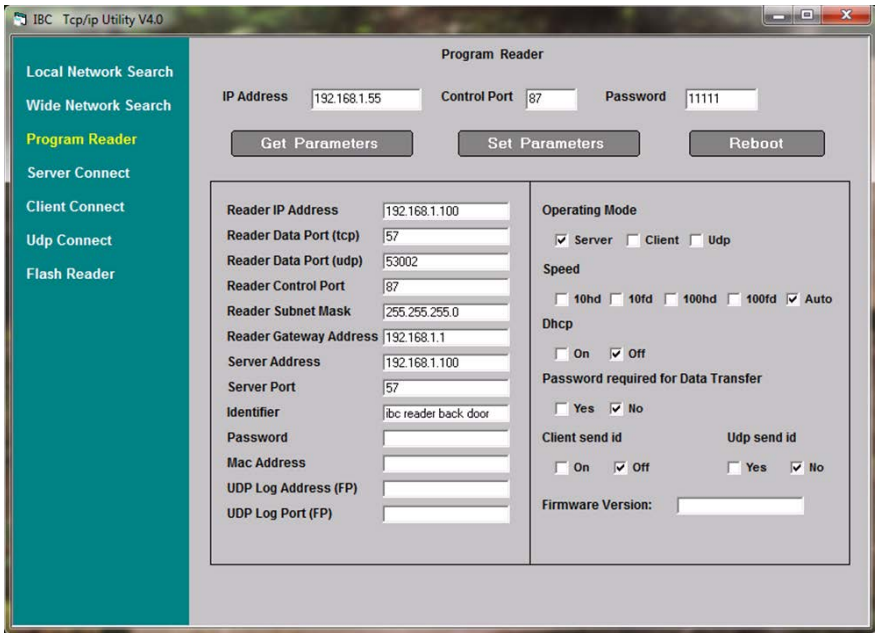
6 To begin the configuration in Windows, go to Start • Programs • IBC. Run the Icbtcp44.exe utility program. You will see screens similar to the following screens, though IP Address, Port and other information may vary.





7 Click **Local Network Search**. Press **F1 Start Search**. You should see the default IP address of the Smart J/Sprox J/qSCAN, the MAC address of the reader, the Reader Identification and the Ctrl Port.

8 Double click on the first device listed. This will display the Program Reader screen. In the **IP Address** field, enter the IP address of the first device. Do not change the value of the **Control Port** and the **Password**. If the **Control Port** field is blank, enter **87**. Click **Get Parameters**.



9 Change the **Reader IP Address**, the **Reader Subnet Mask** and the **Reader Gateway Address** (if applicable) to values determined by your Network Administrator. Enter a unique name in the **Identifier** field to identify this specific Smart J/Sprox J/qSCAN.

10 Set the **Operating Mode** to *Server*.

11 Set the **Speed** to *Auto*.

12 Set the **Dhcp** option to *Off*.

13 Set the **Password required for Data Transfer** to *No*.

14 Ensure that the IP Address in the **Server Address** field is *the same* as the IP Address in the **Reader IP Address** field.

15 Click **Set Parameters**. Once the new parameters are saved you will receive the following message: "New Parameters have been set – You must Reboot (or repower) the reader for the new parameters to take effect."

Click **OK**.

16 Click **Reboot**. Click **OK**.

17 If using bar code access control, configure the Smart J/qSCAN by swiping the **set % preamble** found in the Smart Slot J/qSCAN Series commands document (as well as in Section 8 of this document). An audible signal confirms that the bar code has been read and the device has been properly configured.

18 Repeat steps 6–17 for each Smart J/Sprox J/qSCAN device.

19 At some point, you will need to change the IP properties back to the original properties. Continue to the next section.

Section 6: MS3480/MS3580/MS7120/MS4980/MS7580/MS7625/DL1100i & 7000 RIB Hardware Installation

1. All CAT 5e/6 cable and power supplies should be installed and tested prior to installing the access control hardware.

   If using the MS7580, ensure you are using the custom cable that came with your unit.

2. Install the door strike(s) or turnstile(s).

> **Note:** VSI strongly recommends connecting and testing all devices prior to permanently securing the devices to their final positions.

3. Install the 7000 RIB & MS3480/MS3580/MS7120/MS4980MS7580 near the access control point where your customers can reach it.
4. Connect cable between the network hub/switch and the 7000 RIB device. For PoE, be sure to connect the cable to the powered ports on the PoE Hub/Switch or Power Injector.

> **Note:** If NOT using POE, connect a 9volt 300ma power supply to the 7000 RIB device.

5. Complete the connection between the 7000 RIB and the door strike or turnstile. An electrical contractor/engineer must design and physically complete this connection. If the door strike/turnstile doesn't have a built-in MOV, the electrical contractor will need to build one into the circuit. Also connect the MS3480/MS3580/MS7120/MS4980MS7580 Scanner to the adapter (Male/Male or Male/Female, depending on your hardware) , which should then be connected to the RS232 port of the board. If you're using the MS4980 ***without*** POE, connect the MS4980 to 5.2volt power supply which came with the unit.

> **Important Note:** If using PoE, the maximum allowable current is 350ma. If the current exceeds this maximum, a contractor will have to design the circuit with an additional relay between the 7000 RIB and the door strike or turnstile.

6. After all the connections are complete; the customer must notify VSI so that the Connectivity Test can be performed. *This test must be completed approximately four weeks prior to your live operation date.*
7. If you are installing weatherized units outdoors, be sure to seal the case(s) properly.

Section 7: Smart J/qSCAN Hardware Installation

1. All CAT 5e/6 cable and power supplies should be installed and tested prior to installing the access control hardware.
2. Install the door strike(s) or turnstile(s).

> **Note:** VSI strongly recommends connecting and testing all devices prior to permanently securing the devices to their final positions.

3. Install the Smart J/qSCAN near the access control point where your customers can reach it. If using a proximity head, install the Sprox J in the access panel.
4. If using a proximity head, you will need to mount it and connect it to the Sprox J. (Refer to the Sprox J to Proximity head wiring diagram in Section 7.)
5. Connect CAT 5e/6 cable between the network hub/switch and the Smart J/Sprox J/qSCAN device. If using a PoE Standard Smart J/qSCAN or PoE Non-Standard Smart J/qSCAN, be sure to connect the CAT5e/6 cable to the powered ports on the PoE Hub/Switch or Power Injector.
6. Connect power to the Smart J/Sprox J/qSCAN device.

> **Note:** This step is not necessary if using a PoE Standard or a PoE Non-Standard Smart J/qSCAN.

7. Complete the connection between the Smart J/Sprox J/qSCAN and the door strike or turnstile. An electrical contractor/engineer must design and physically complete this connection. If the door strike/turnstile doesn't have a built-in MOV, the electrical contractor will need to build one into the circuit.

Important Note: If using a PoE Non-Standard or a Non-PoE Smart J/qSCAN and if power to the contacts is greater than 30VDC and or greater than 500mA, the contractor will have to design the circuit with an additional relay between the Smart J/Sprox J/qSCAN and the door strike or turnstile.

If using a PoE Standard Smart J/qSCAN, 12VDC is delivered by the PoE hub/switch Smart J/qSCAN from the relay to the door strike/turnstile with maximum 500ma. Be sure that the door strike/turnstile voltage requirement is 12VDC and that the amp requirement of the door strike/turnstile does not exceed amps supplied by the PoE hub/switch/injector.

8 After all the connections have been completed and power has been supplied to the access point and the Smart J/Sprox J/qSCAN (if required), the customer must notify VSI so that the Connectivity Test can be performed. *This test must be completed approximately four (4) weeks prior to your live operation date.*

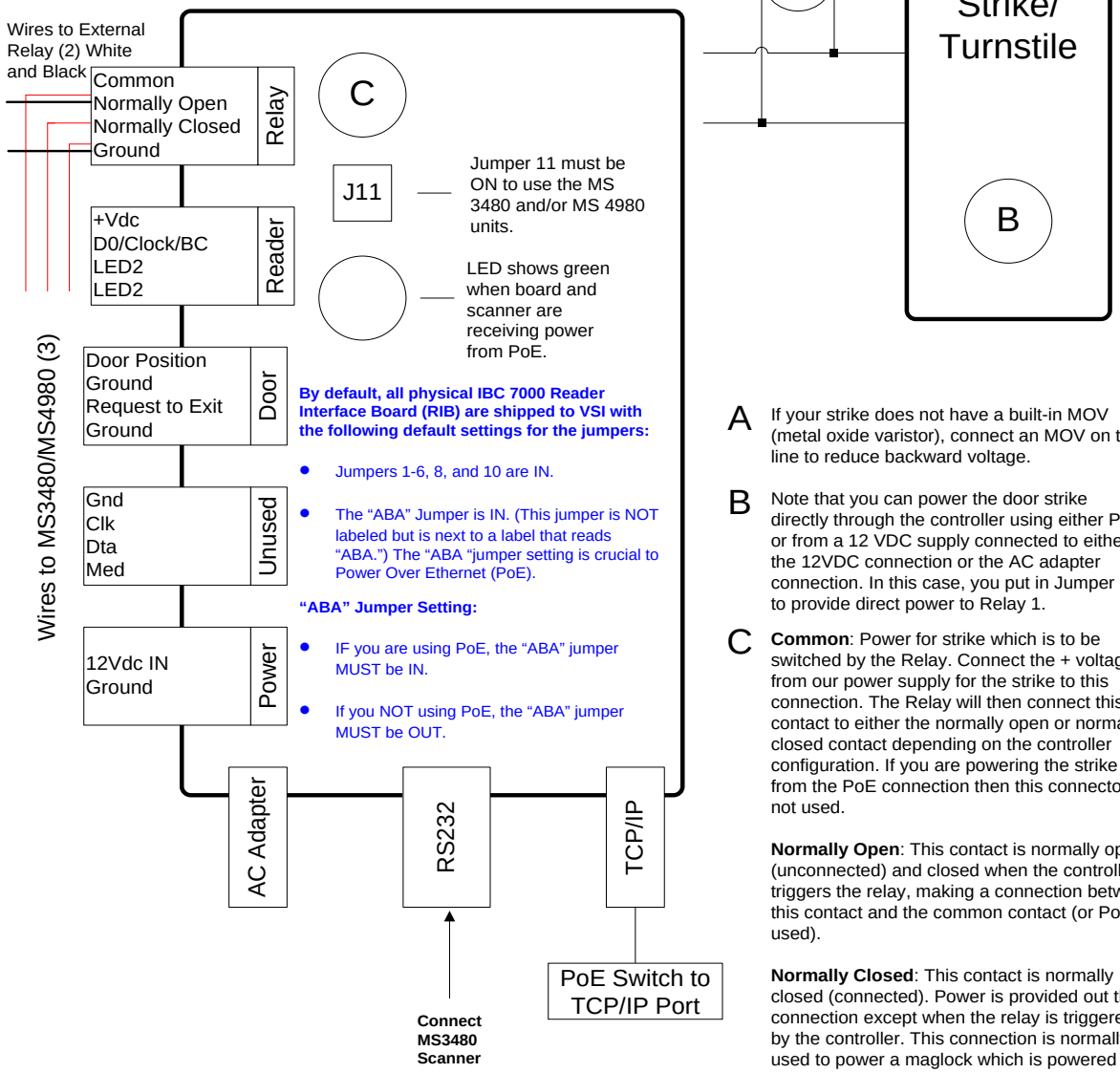
9. If you are installing weatherized units outdoors, be sure to seal the back side of the Smart J to the mounting plate using silicon caulking, such as 3M 5200 or Life Caulk. This will ensure that water or moisture doesn't cause damage to the internal wiring. The qSCAN is delivered sealed.

Section 7: Access Control Diagrams

7000 RIB to Strike Diagram

7000 RIB to Strike/Turnstile Diagram

An external power source is required to power the strike. The voltage supplied must be equal to the voltage output of the strike. The external power source must be wired to the Common Relay and either the Normally Open or Normally Closed Relay and to the Strike/Turnstile wires as well.



A If your strike does not have a built-in MOV (metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B Note that you can power the door strike directly through the controller using either PoE or from a 12 VDC supply connected to either the 12VDC connection or the AC adapter connection. In this case, you put in Jumper 11 to provide direct power to Relay 1.

C **Common**: Power for strike which is to be switched by the Relay. Connect the + voltage from our power supply for the strike to this connection. The Relay will then connect this contact to either the normally open or normally closed contact depending on the controller configuration. If you are powering the strike from the PoE connection then this connector is not used.

Normally Open: This contact is normally open (unconnected) and closed when the controller triggers the relay, making a connection between this contact and the common contact (or PoE if used).

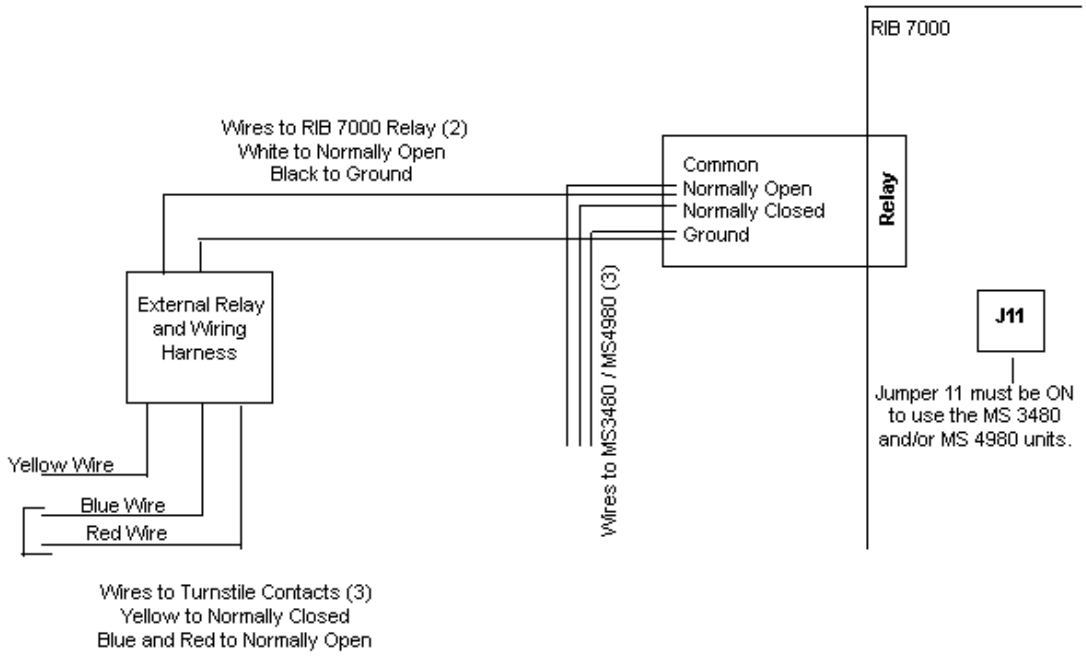
Normally Closed: This contact is normally closed (connected). Power is provided out this connection except when the relay is triggered by the controller. This connection is normally used to power a maglock which is powered to keep the door closed.

Ground: Connect to the Ground on your strike only if you are using PoE to power the strike.

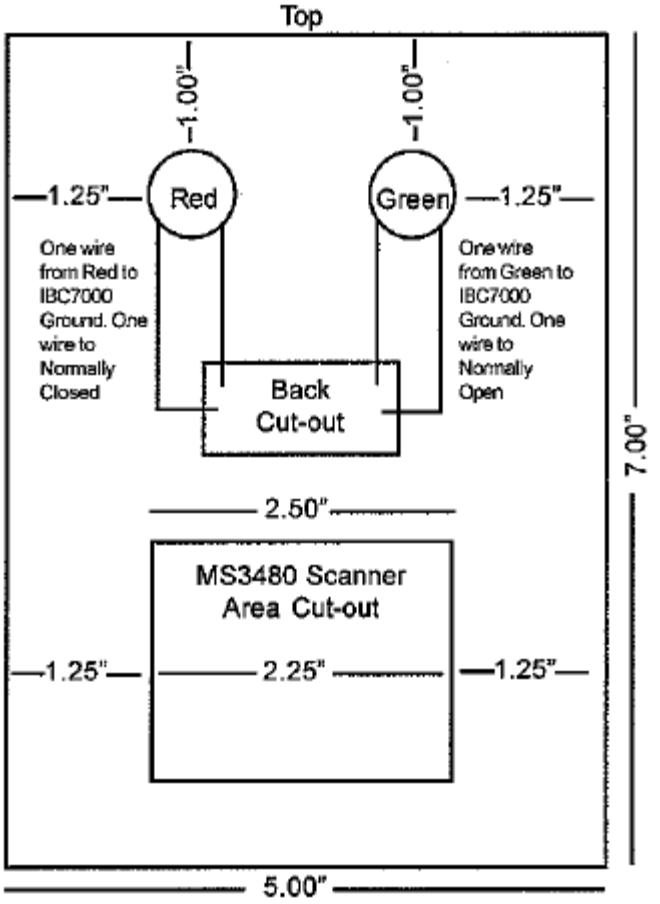
If using PoE to power the door strike, verify the output voltage of the strike by using a Voltage meter connected to the Common and Ground Relays. If the strike voltage exceeds 12VDC, an external power source will be required.

This is a diagram for the 7000 RIB as of 05/06/2008. Please refer to www.interbar.com to verify wiring diagram.

7000 RIB to External Power Source Diagram

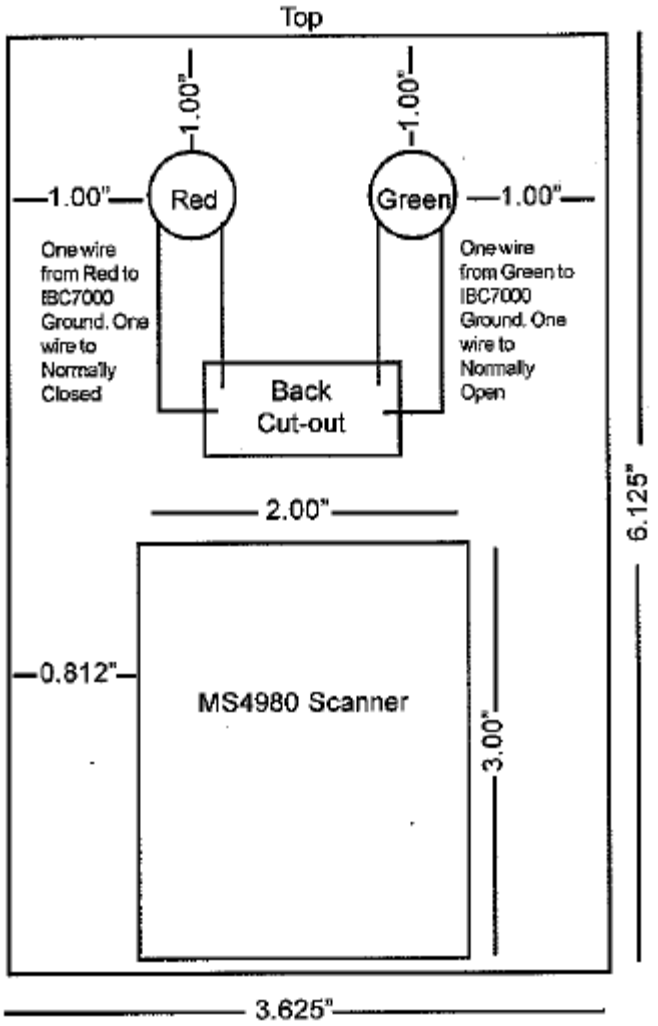


OKW MS3480 Scanner & Enclosure Unit for Use with the IBC7000



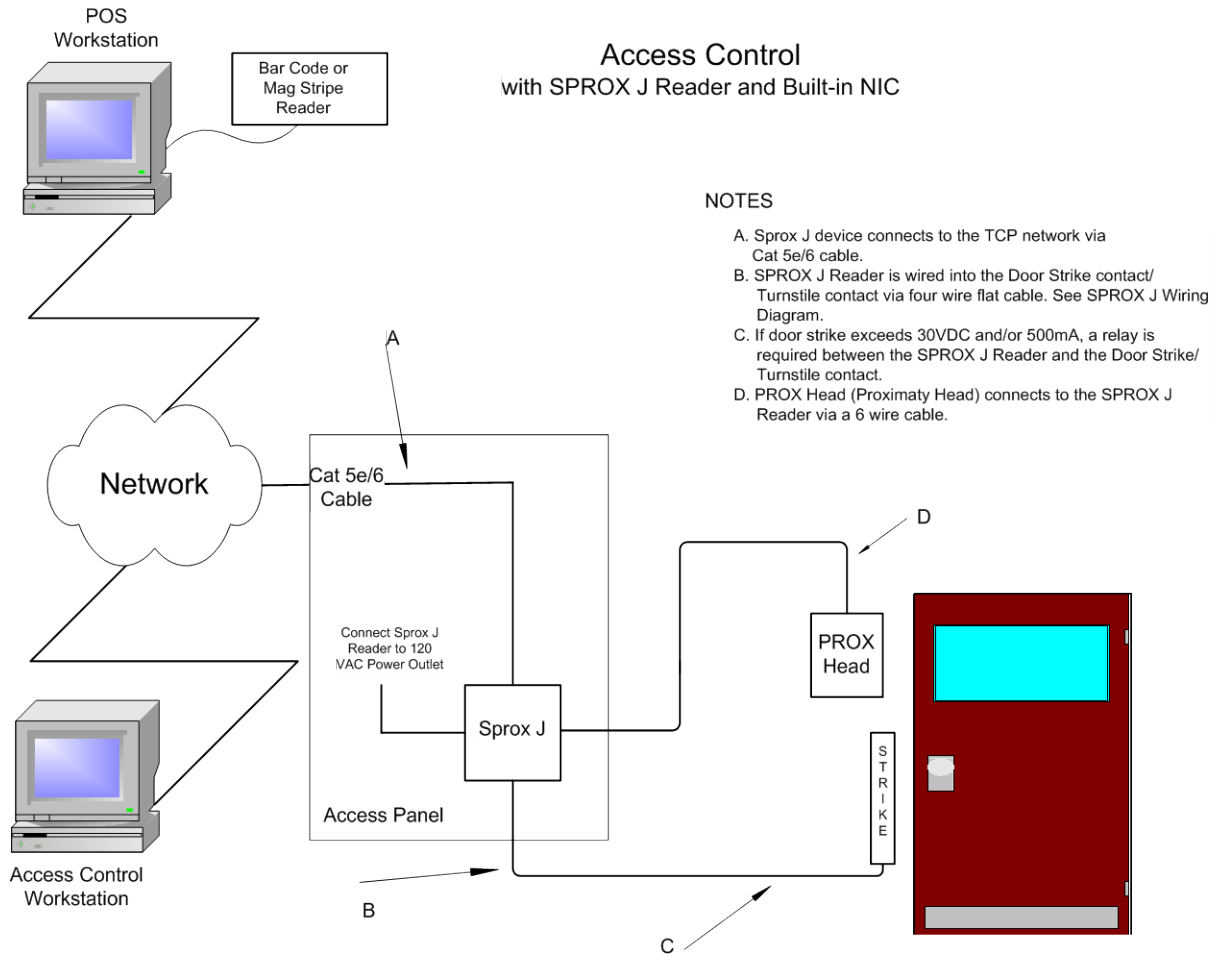
Caution! Placing the MS3480 in an area where it will be subject to direct sunlight will have a negative impact on the unit's ability to read barcodes and may result in permanent damage.

OKW MS4980 Scanner & Enclosure Unit for Use with the IBC7000

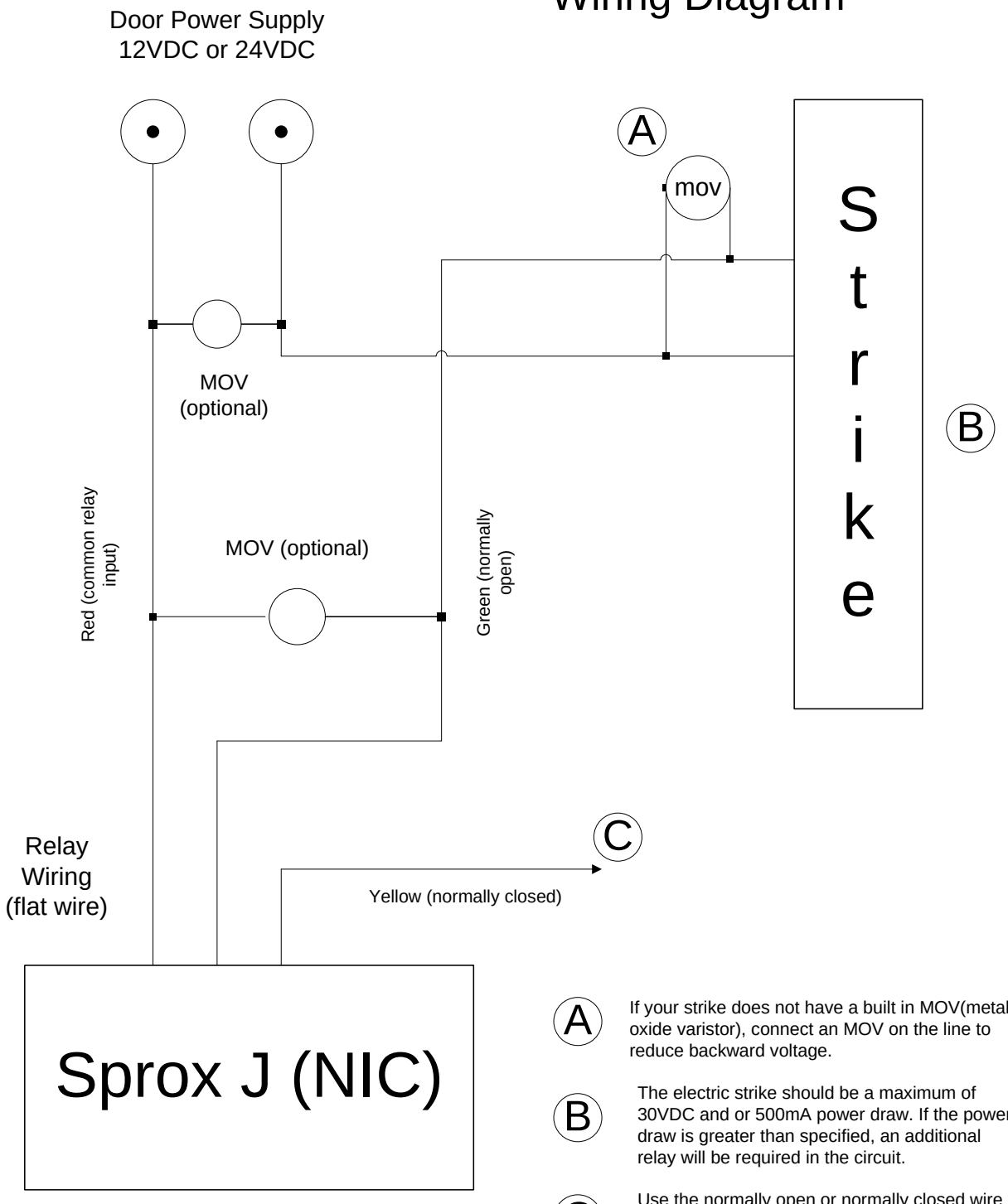


Caution! Placing the MS4980 in an area where it will be subject to direct sunlight will have a negative impact on the unit's ability to read barcodes, as the temperature inside the enclosure may exceed the maximum 104 DF and may result in damage. VSI recommends placing the unit in an area NOT subject to direct sunlight. If that is not an option, VSI recommends housing the unit under some form of constructed shelter.

Sprox J with Built-in NIC Diagram



Sprox J to Door Strike Wiring Diagram



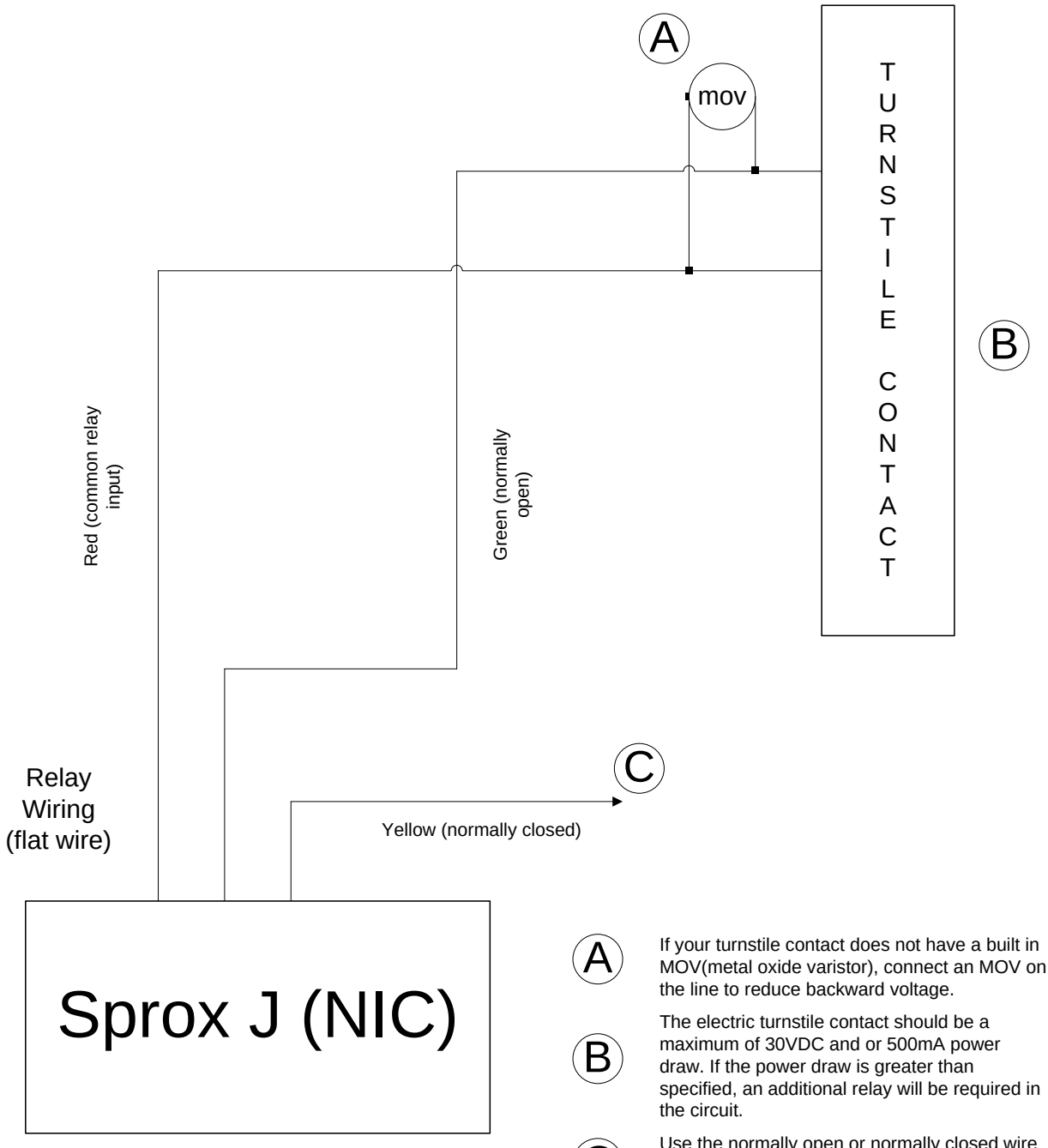
A — If your strike does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — The electric strike should be a maximum of 30VDC and or 500mA power draw. If the power draw is greater than specified, an additional relay will be required in the circuit.

C — Use the normally open or normally closed wire depending on the requirements of your installation.

This is a diagram for the SPROX J as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

Sprox J to Turnstile Contact Wiring Diagram



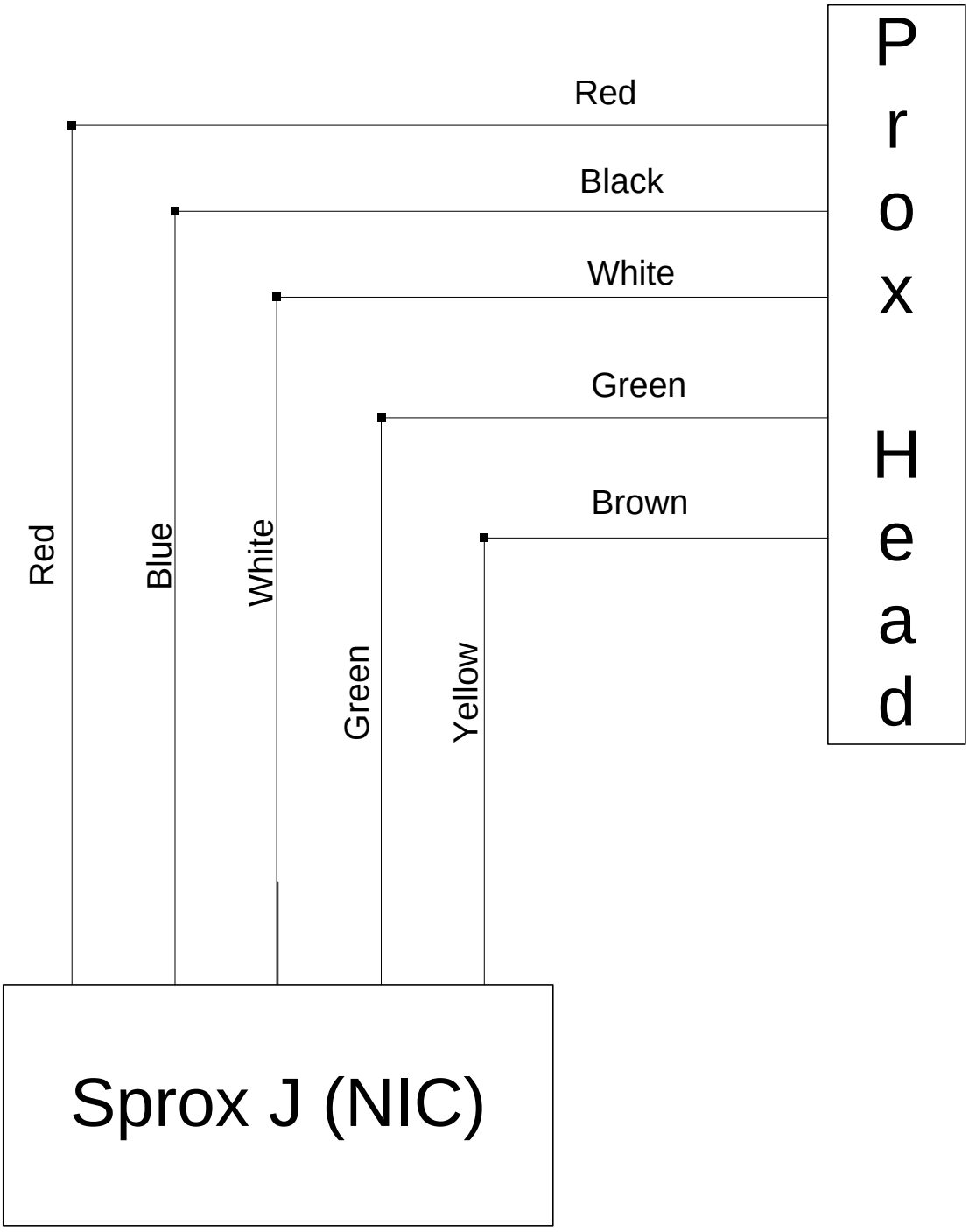
A — If your turnstile contact does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — The electric turnstile contact should be a maximum of 30VDC and or 500mA power draw. If the power draw is greater than specified, an additional relay will be required in the circuit.

C — Use the normally open or normally closed wire depending on the requirements of your installation.

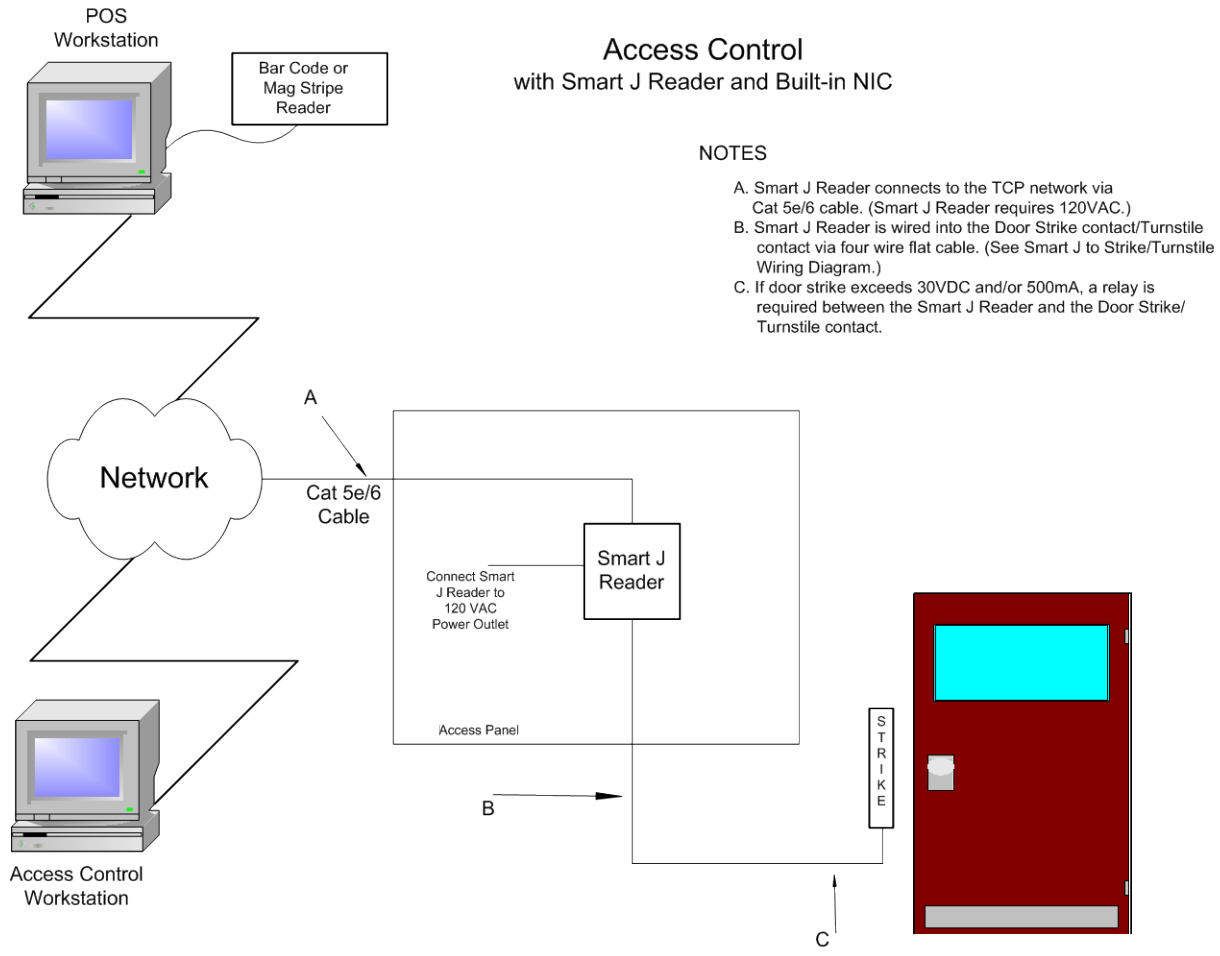
This is a diagram for the SPROX J as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

Sprox J to Proximity Head Wiring Diagram

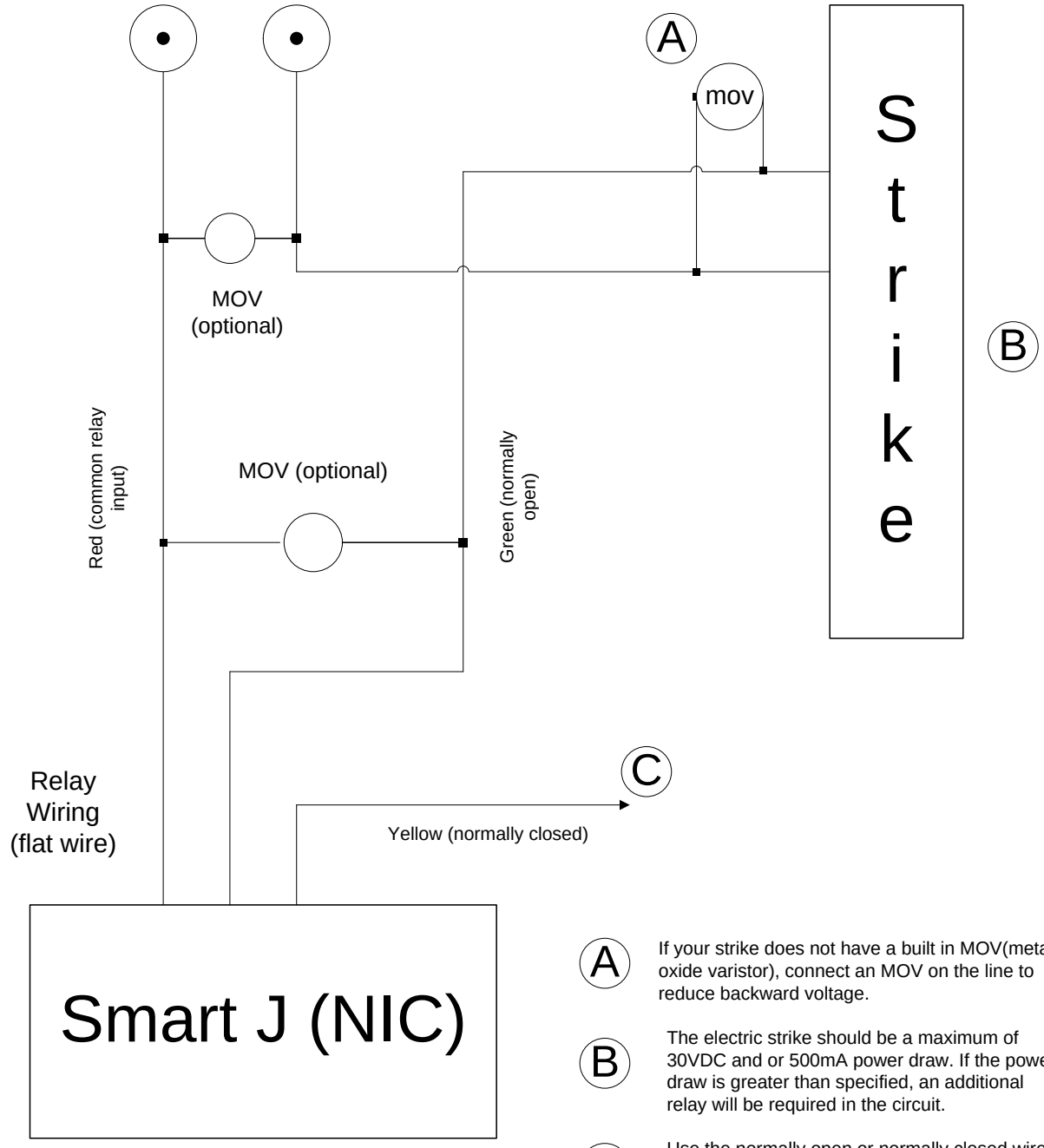


This is a diagram for connecting the SPROX J to the Proximity Head as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

Smart J with Built-in NIC Diagram



Smart J (NIC) to Door Strike Wiring Diagram



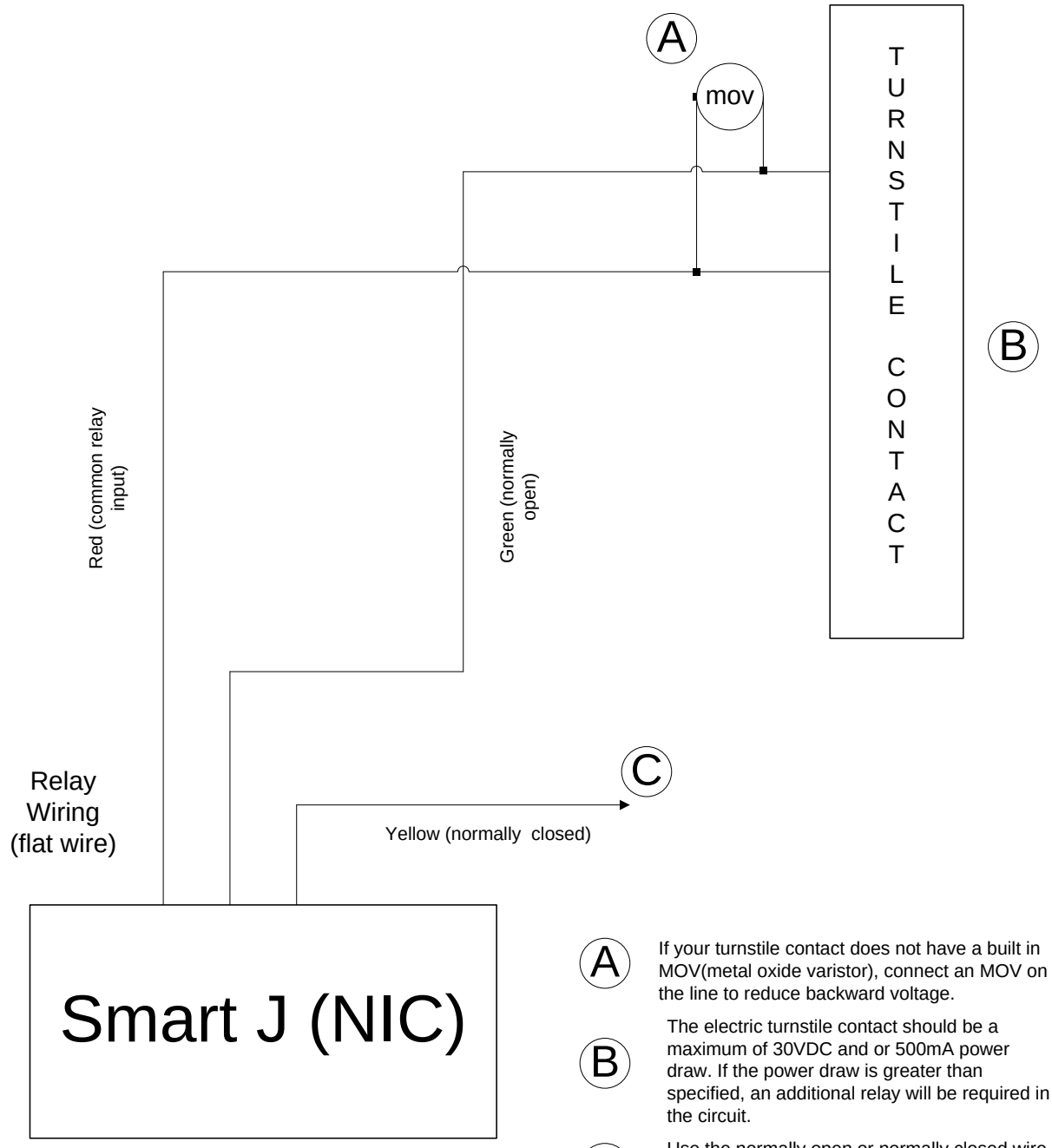
A — If your strike does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — The electric strike should be a maximum of 30VDC and or 500mA power draw. If the power draw is greater than specified, an additional relay will be required in the circuit.

C — Use the normally open or normally closed wire depending on the requirements of your installation.

This is a diagram for the Smart J as of 04/10/2013 Please refer to www.interbar.com to verify wiring diagram.

Smart J (NIC) to Turnstile Contact Wiring Diagram



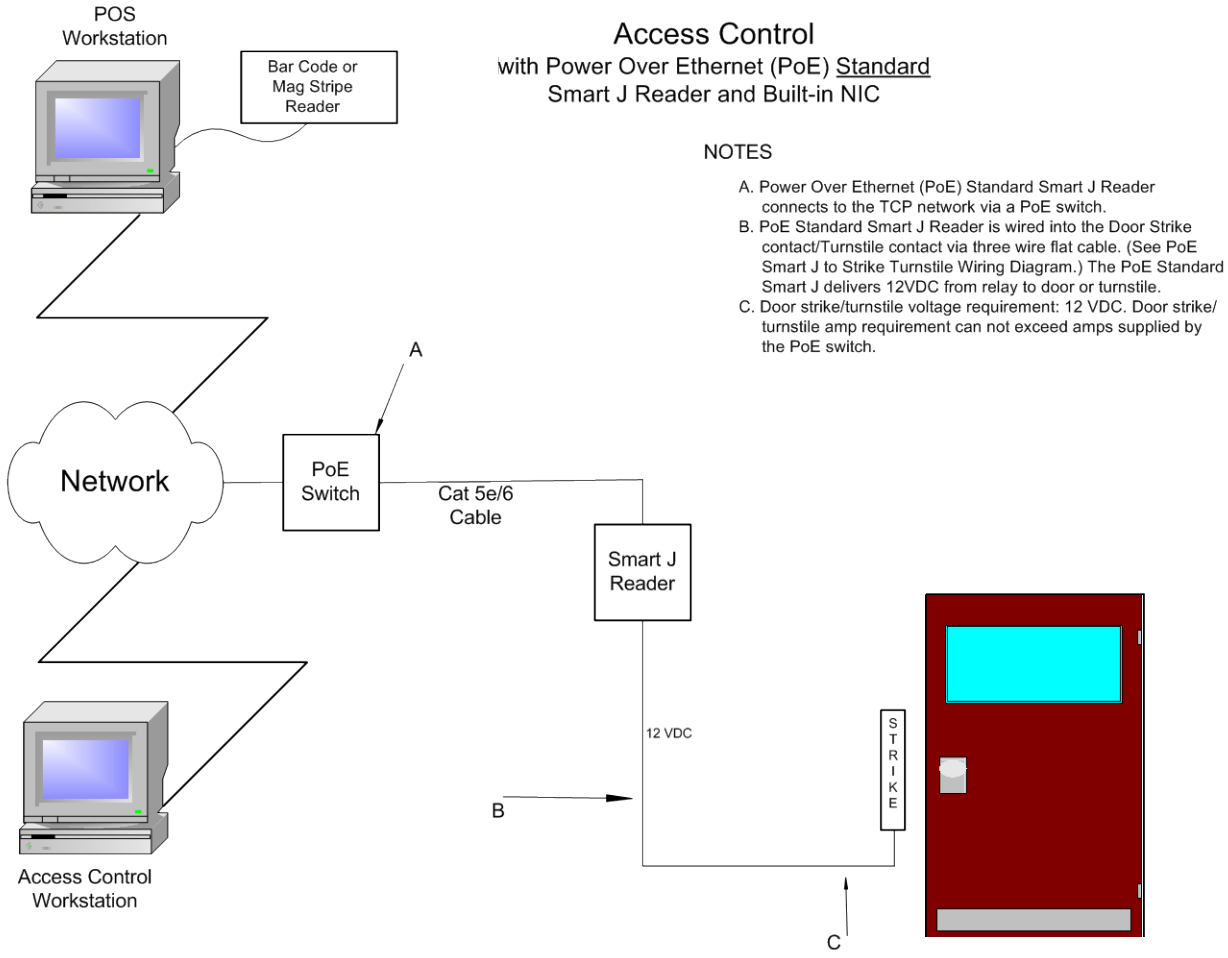
A — If your turnstile contact does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — The electric turnstile contact should be a maximum of 30VDC and or 500mA power draw. If the power draw is greater than specified, an additional relay will be required in the circuit.

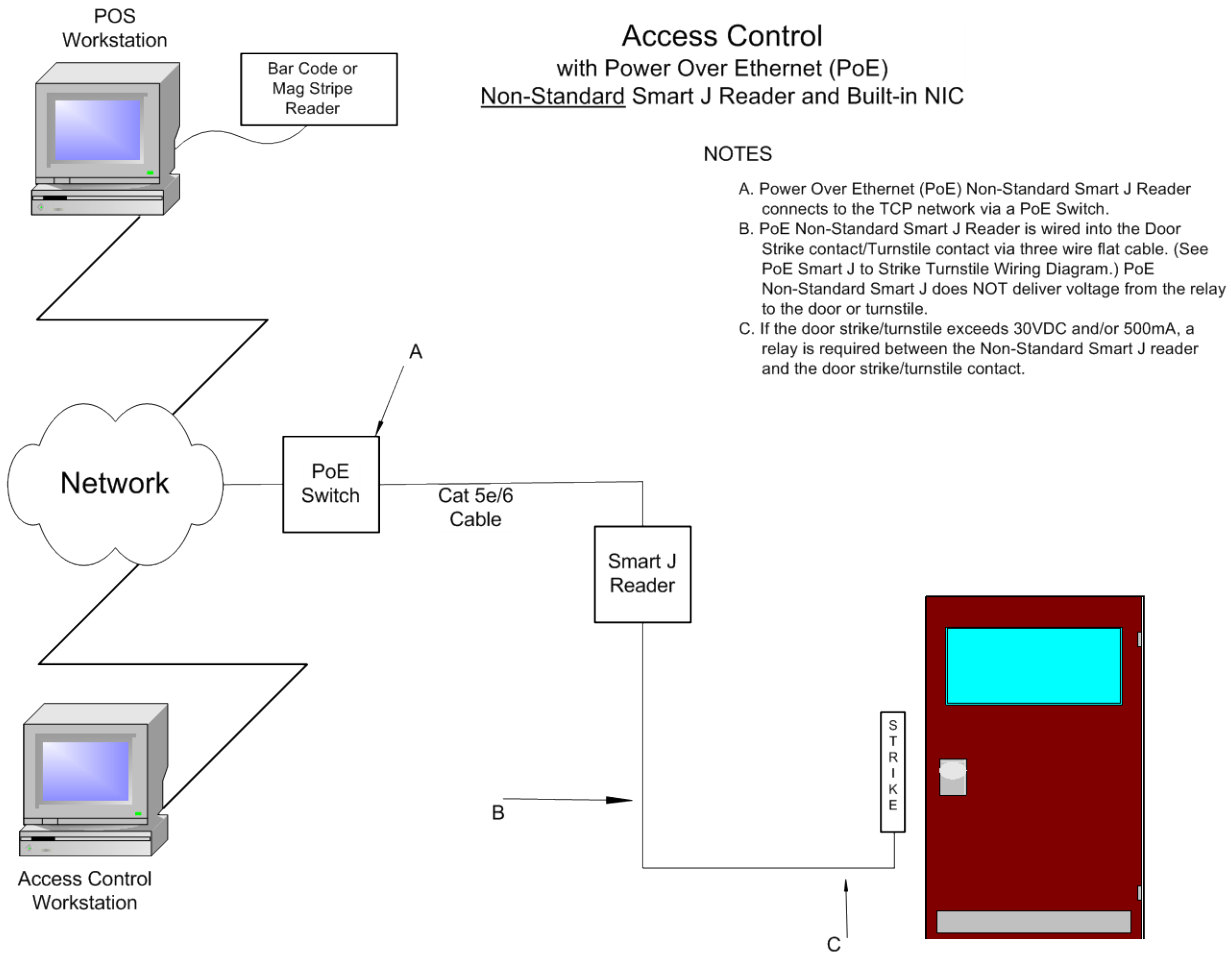
C — Use the normally open or normally closed wire depending on the requirements of your installation.

This is a diagram for the Smart J as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

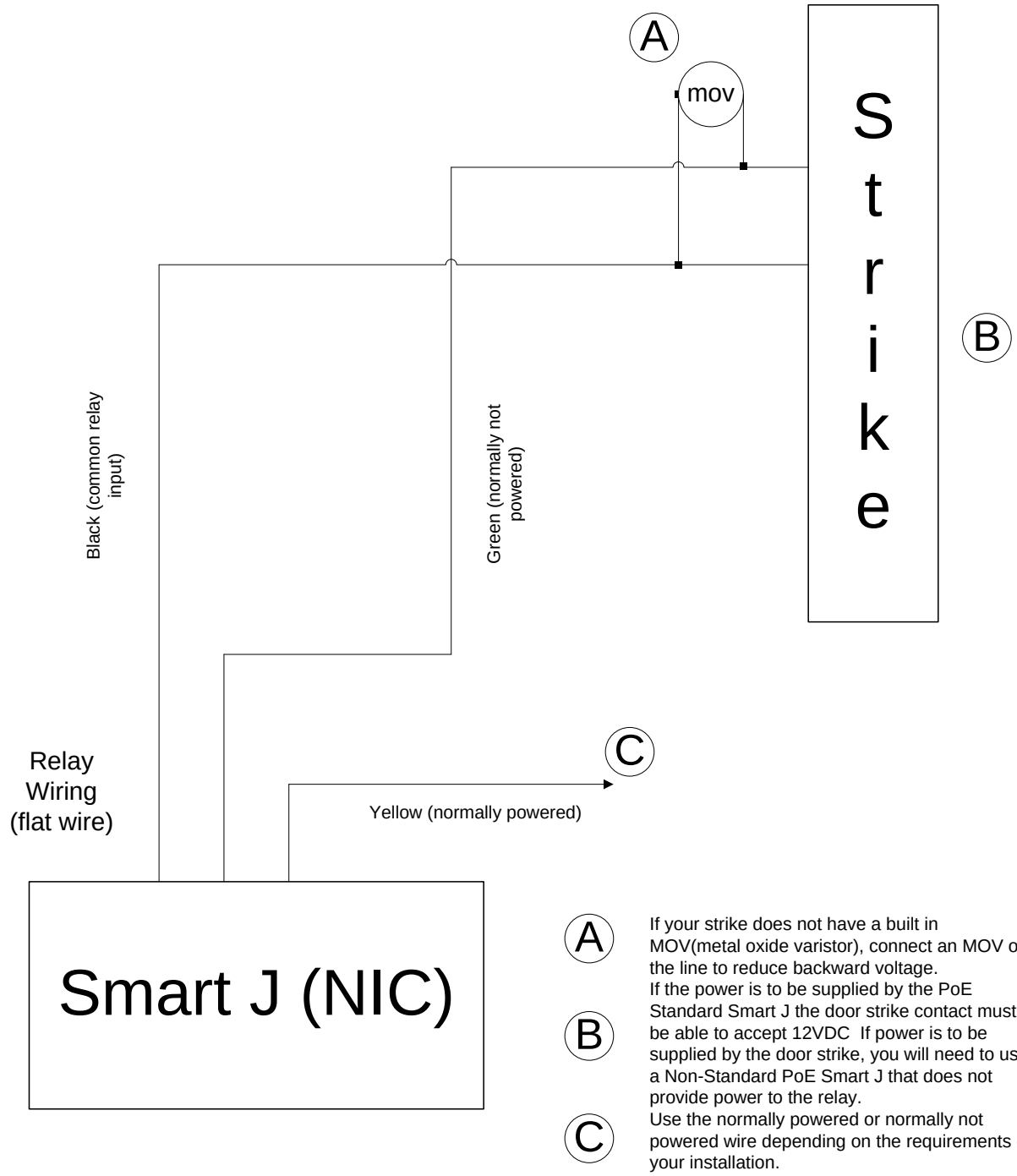
PoE Standard Smart J with Built in NIC Diagram
(Also Applies to 7000 RIB)



PoE Non-Standard Smart J with Built in NIC Diagram



PoE Smart J (NIC) to Door Strike Wiring Diagram



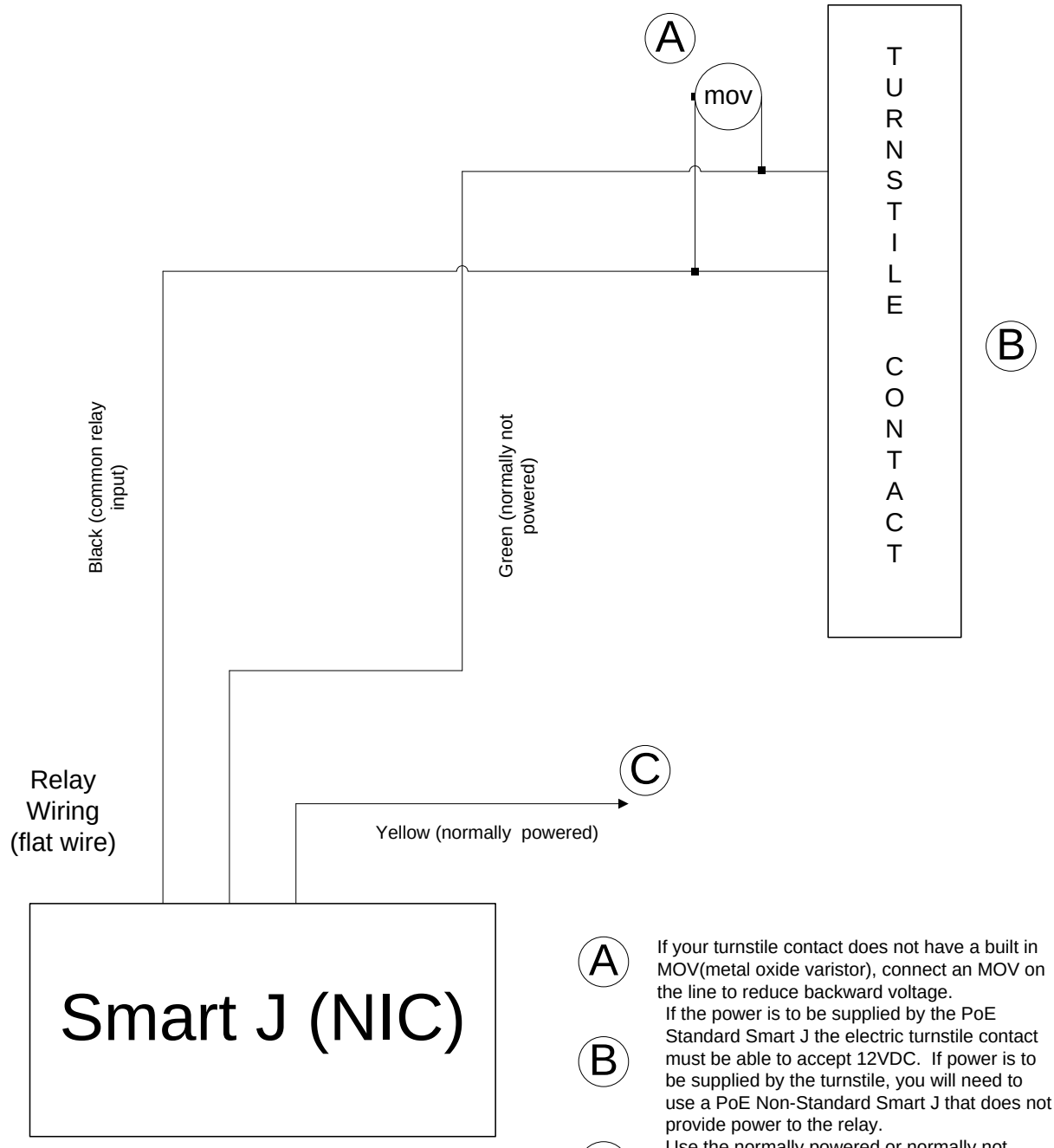
A — If your strike does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — If the power is to be supplied by the PoE Standard Smart J the door strike contact must be able to accept 12VDC If power is to be supplied by the door strike, you will need to use a Non-Standard PoE Smart J that does not provide power to the relay.

C — Use the normally powered or normally not powered wire depending on the requirements of your installation.

This is a diagram for the Smart J as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

PoE Smart J (NIC) to Turnstile Contact Wiring Diagram



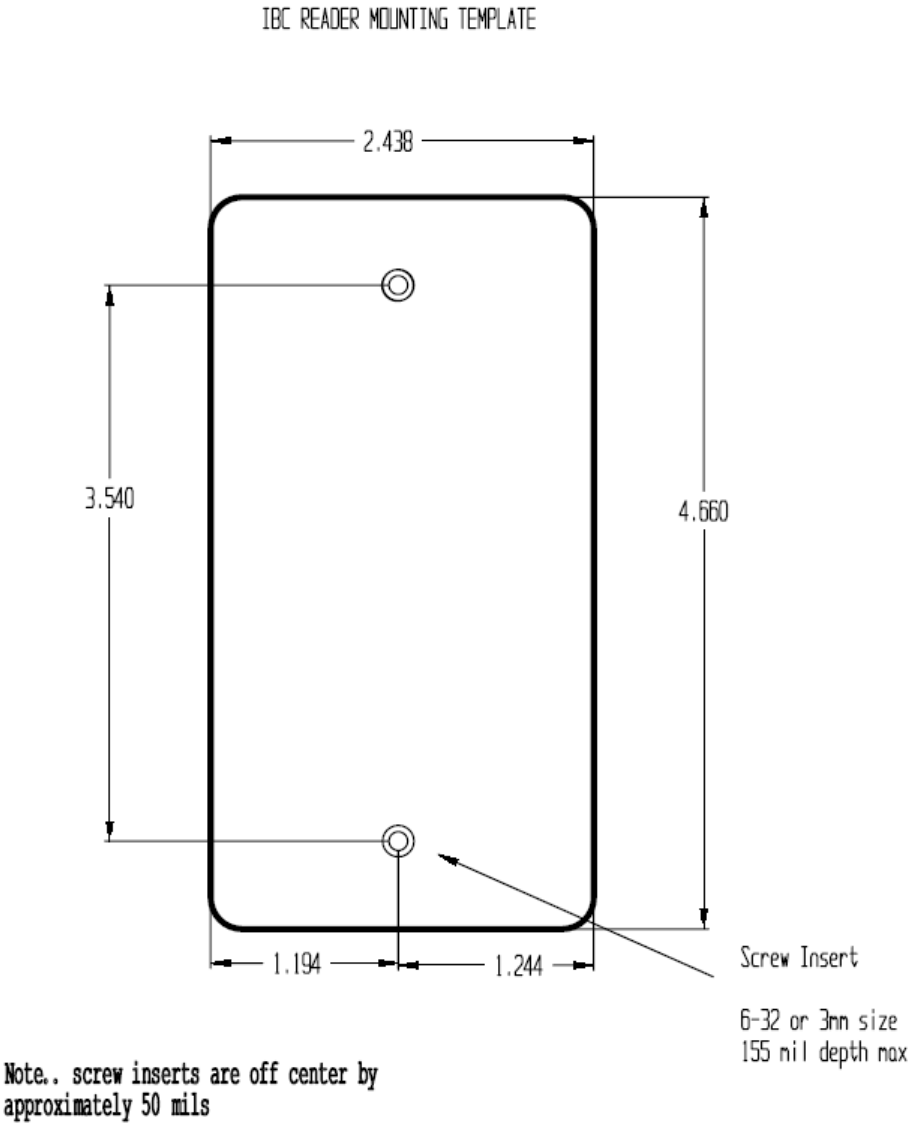
A — If your turnstile contact does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — If the power is to be supplied by the PoE Standard Smart J the electric turnstile contact must be able to accept 12VDC. If power is to be supplied by the turnstile, you will need to use a PoE Non-Standard Smart J that does not provide power to the relay.

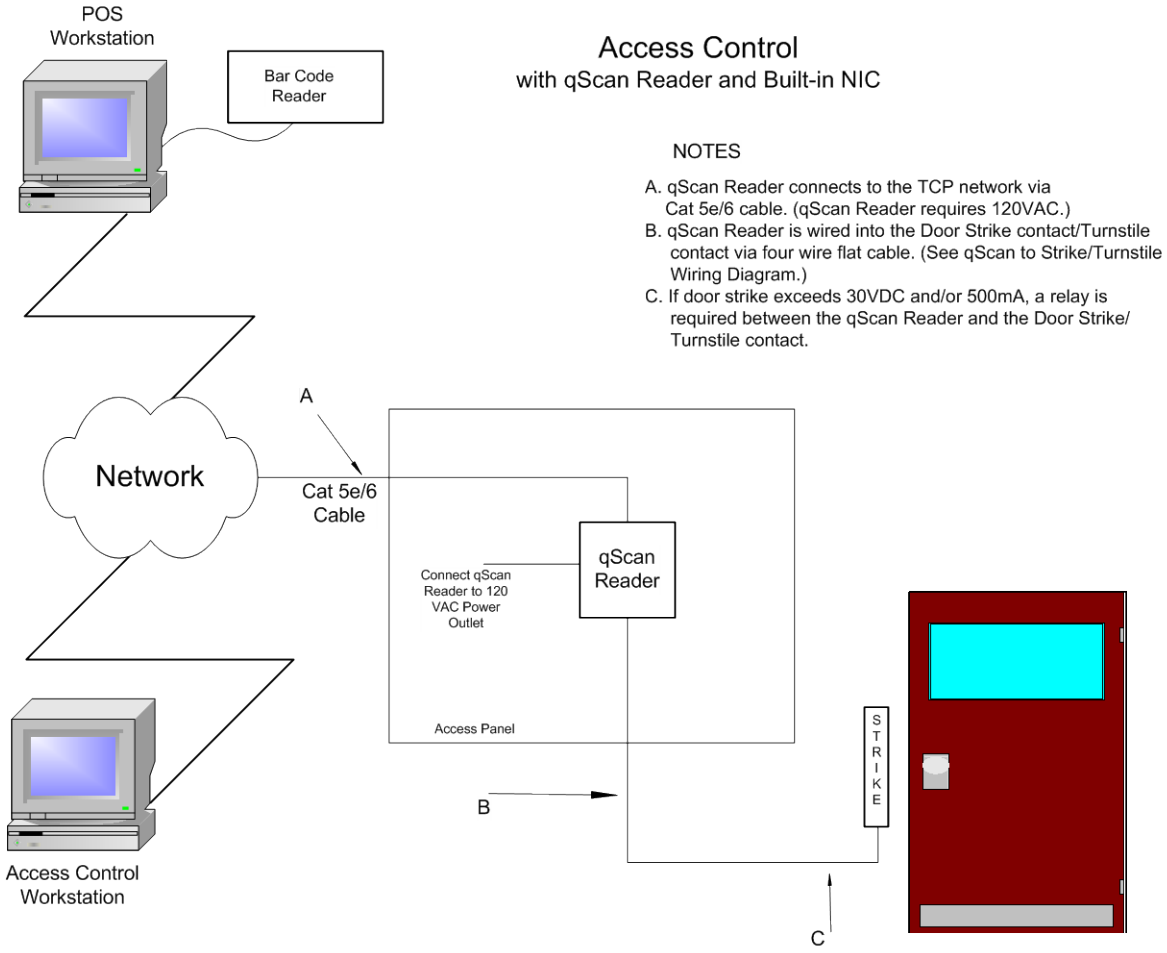
C — Use the normally powered or normally not powered wire depending on the requirements of your installation.

This is a diagram for the Smart J as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

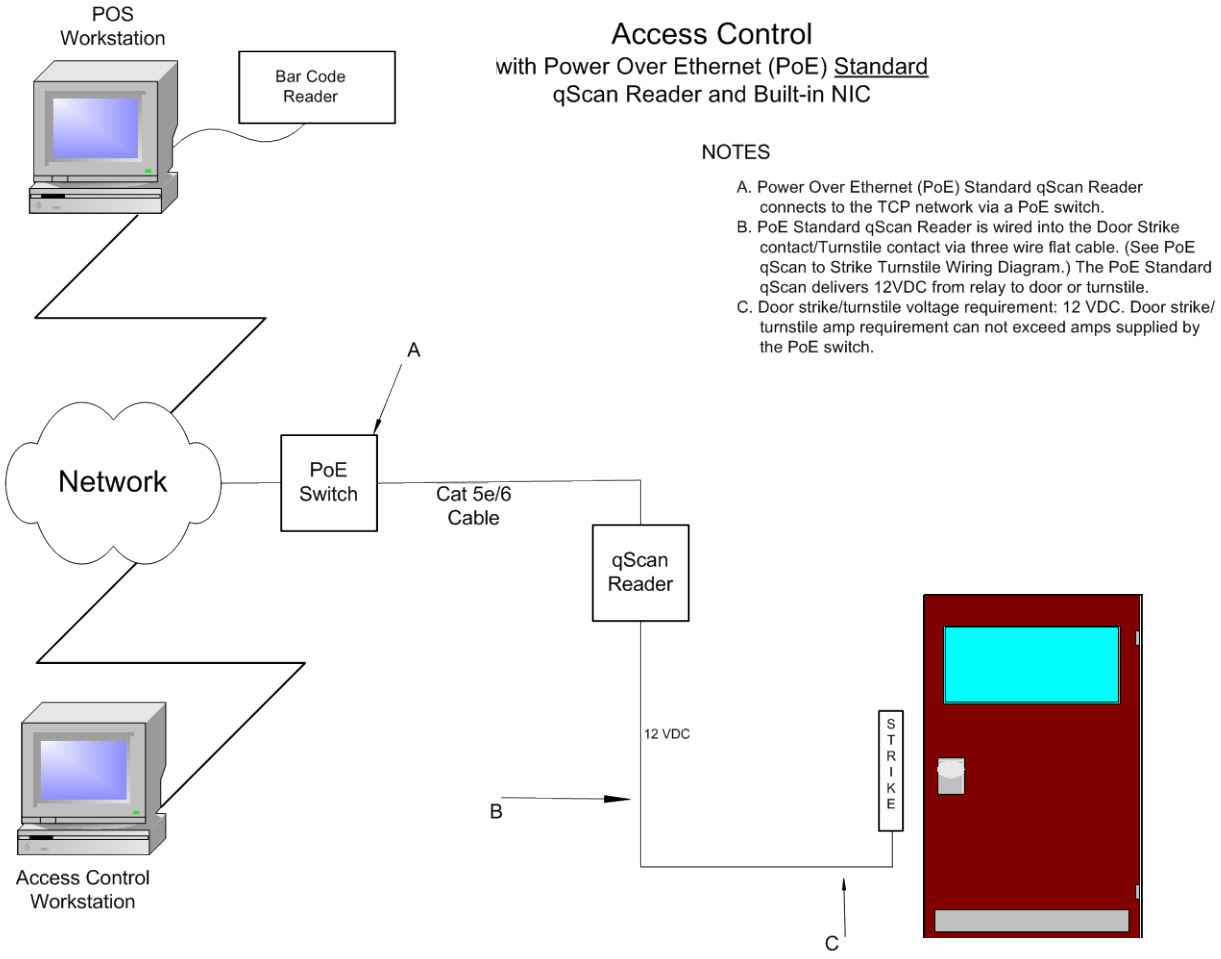
Smart J Mounting Template



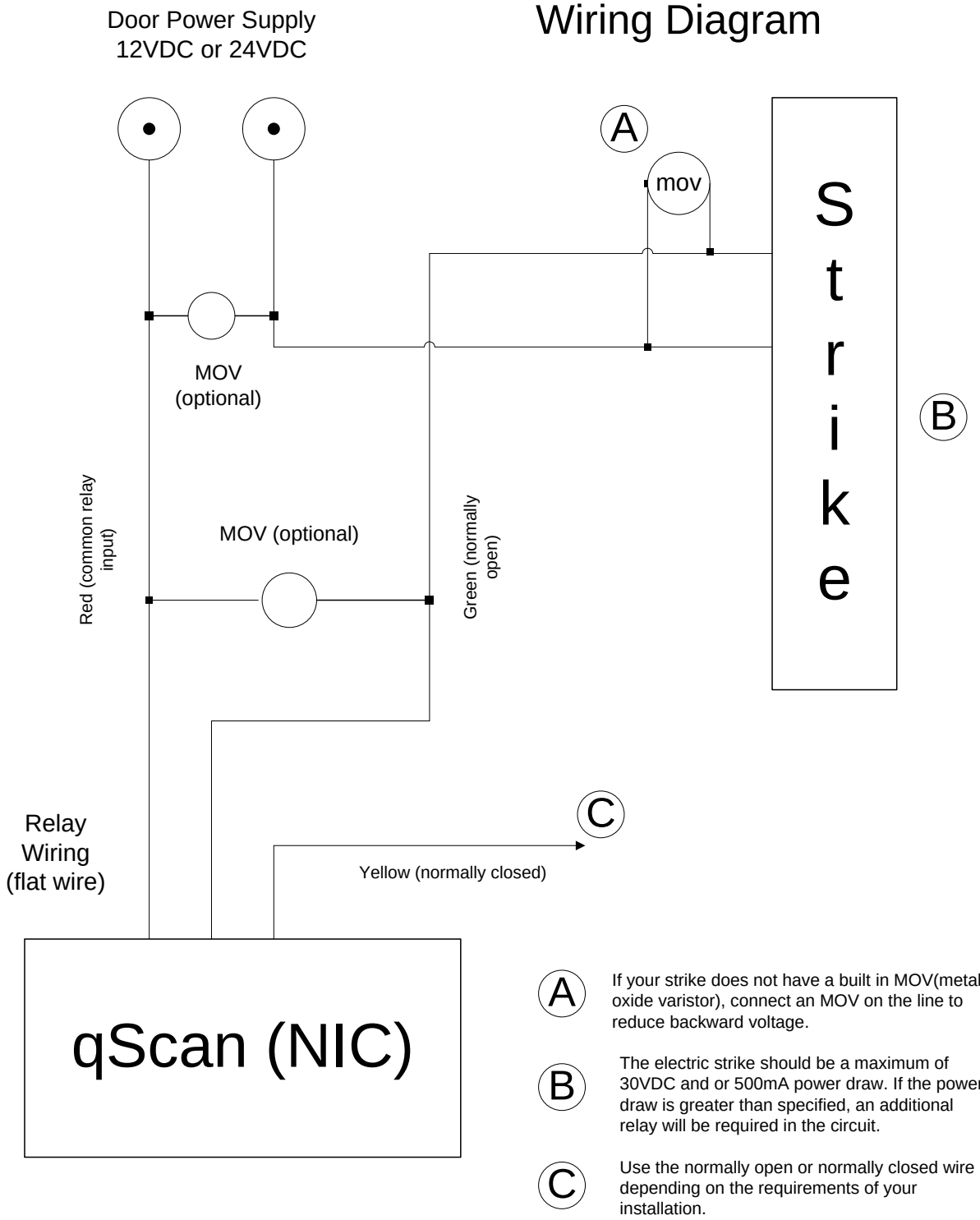
qScan with Built-in NIC Diagram



PoE Isolated Relay ("Standard") qScan with Built in NIC Diagram (Also Applies to 7000 RIB)



qScan (NIC) to Door Strike Wiring Diagram



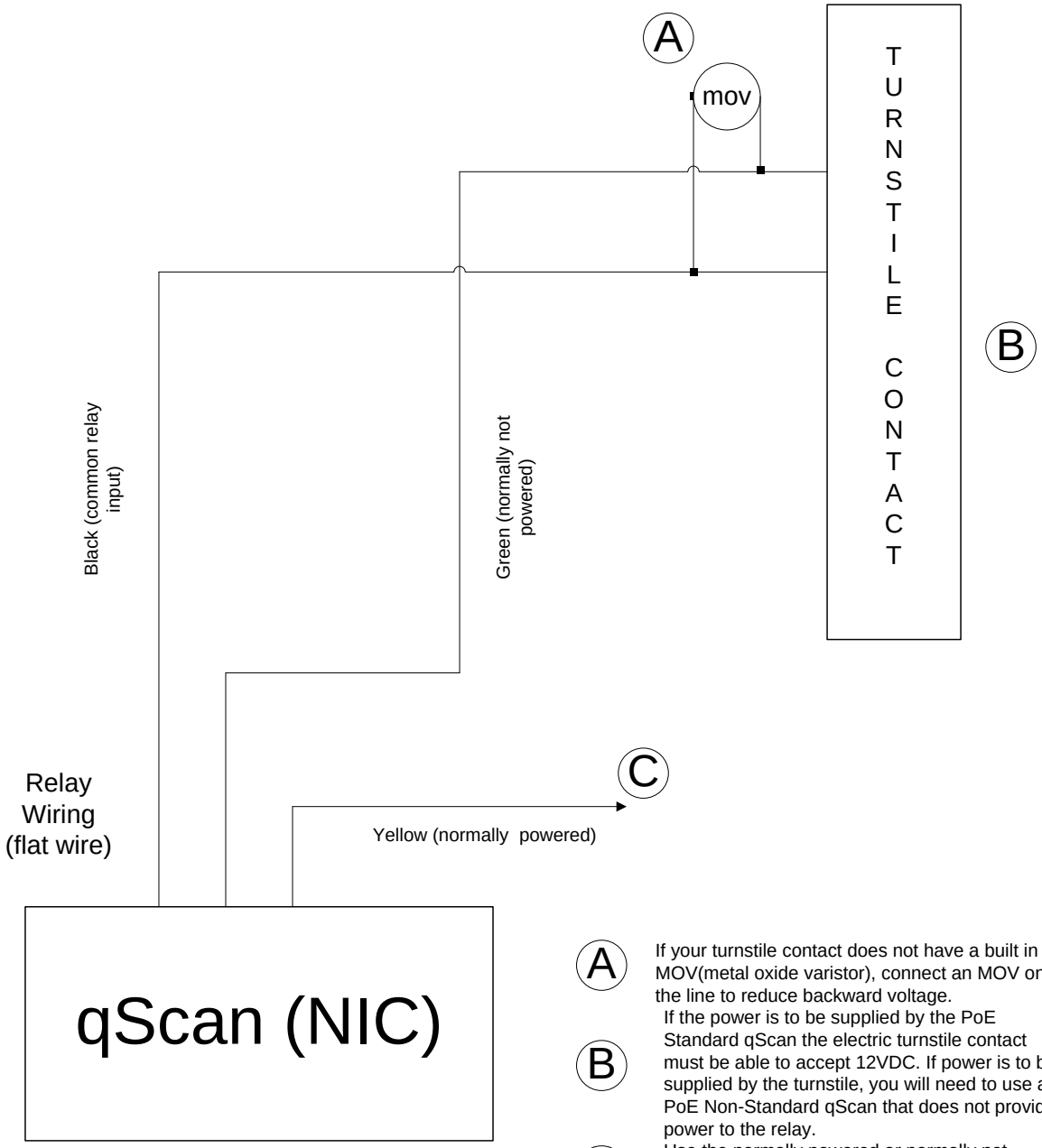
A — If your strike does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — The electric strike should be a maximum of 30VDC and or 500mA power draw. If the power draw is greater than specified, an additional relay will be required in the circuit.

C — Use the normally open or normally closed wire depending on the requirements of your installation.

This is a diagram for the qScan as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

PoE qScan (NIC) to Turnstile Contact Wiring Diagram



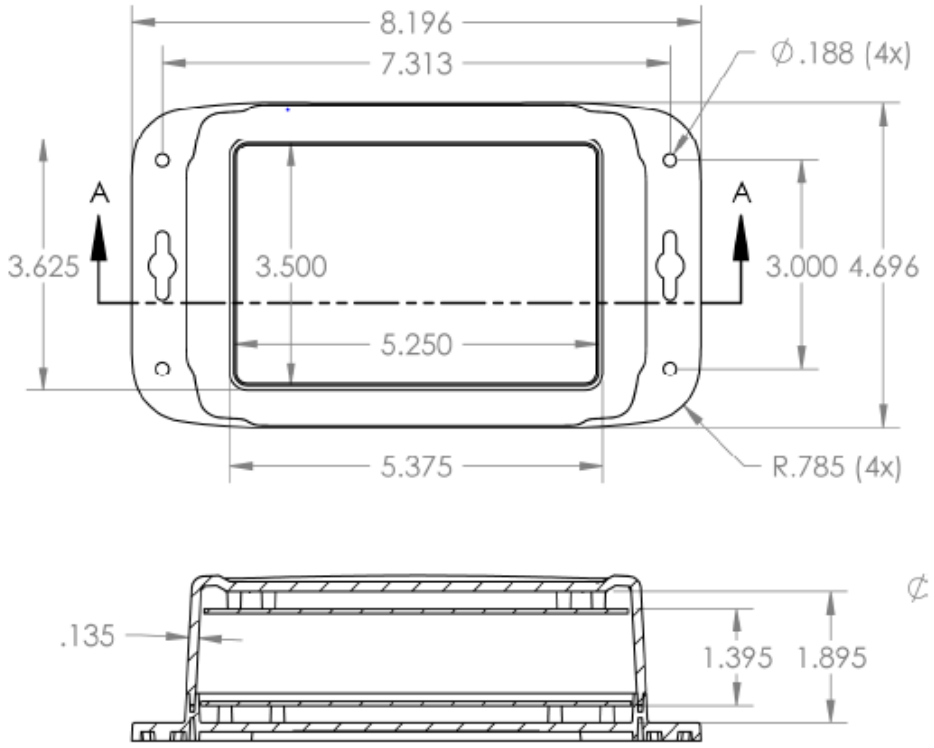
A If your turnstile contact does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B If the power is to be supplied by the PoE Standard qScan the electric turnstile contact must be able to accept 12VDC. If power is to be supplied by the turnstile, you will need to use a PoE Non-Standard qScan that does not provide power to the relay.

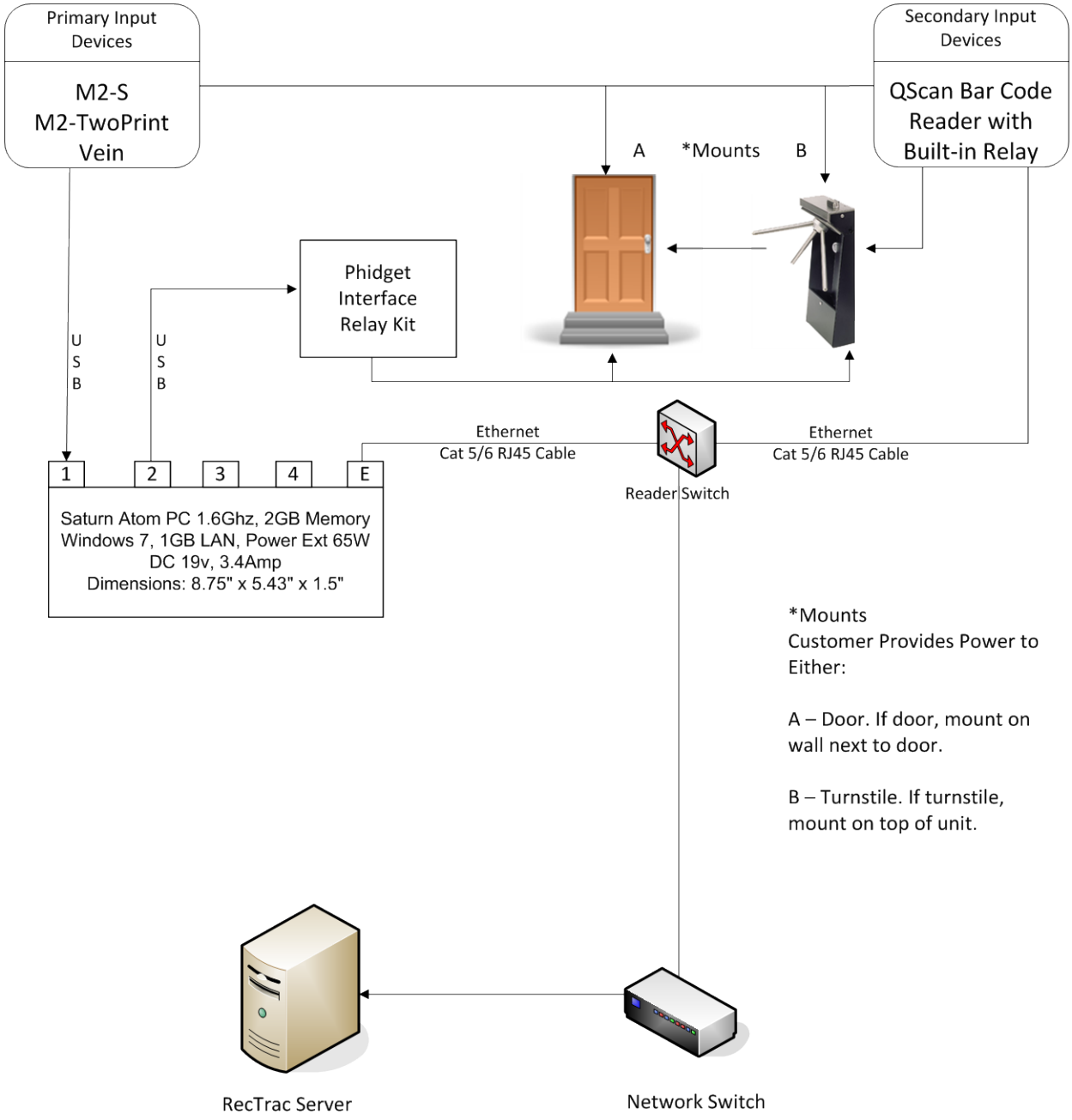
C Use the normally powered or normally not powered wire depending on the requirements of your installation.

This is a diagram for the qScan as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

qScan Mounting Template



Biometric M2SYS Fingerprint/Finger Vein Reader and QScan Bar Code Reader



Section 8: Series Commands

Smart Slot 'J' Series Commands

If using bar code access control, configure the Smart J by swiping the set % preamble found below. To do so, fold the paper so that the bar code will be read as it is swiped through the slot reader. (Note: VSI recommends a buffer of ½" around the ends of the barcode.) An audible signal confirms that the bar code has been read and the device has been properly configured.

Optionally, you can print a Smart J Configuration Card directly to a PVC card using the Template at the very end of this document, if desired.

Set % Preamble

Factory Default

qSCAN Command Response

If using qSCAN bar code access control, configure the qSCAN by scanning the **% UX0460** command response found in the qSCAN Series commands document.

%UX460

Section 9: MS3480/MS3580/MS7580 Scanner Series Commands

Scan the following barcodes in the specified order to set a % prefix for this scanner. (These barcodes can also be found in the MS3480/MS3580/MS7580 Configuration Guide.)

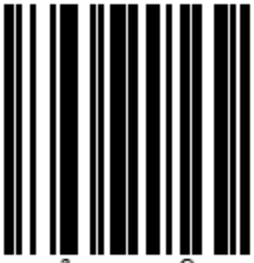
Note: The MS7580 has a dedicated hardware button at the top. You must press and hold this button while scanning the bar codes below. If the configuration is not successful, you will hear a single low tone indicating failure to scan. Successful configuration will produce the results below

1. Enter/Exit Configuration Mode (3 Beeps)
2. Configurable Prefix 1 (1 Beep)
3. Code Byte 0 (1 Beep)
4. Code Byte 3 (2 Beeps)
5. Code Byte 7 (3 Beeps)
6. Enter/Exit Configuration Mode (3 Beeps)

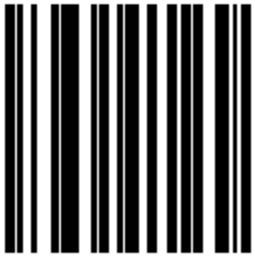
Enter/Exit Configuration Mode

~ Configurable Prefix Character #1

Code Byte 0



Code Byte 3



Code Byte 7

Section 10: Connectivity Test

This test is required to ensure connectivity has been established *outside* of the RecTrac application prior to implementing Access Control from within it

To run the Connectivity test, VSI recommends that one individual be physically present at the device while another individual runs the HyperTerminal program. Six (6) text files—testrelayon.txt, testrelayoff.txt, redledon.txt, redledoff.txt, grnledon.txt and grnledoff.txt—are required to complete the HyperTerminal test. During the RecTrac installation, these files are created in the \VSI\RecTrac\misc\Access Control Test Files directory

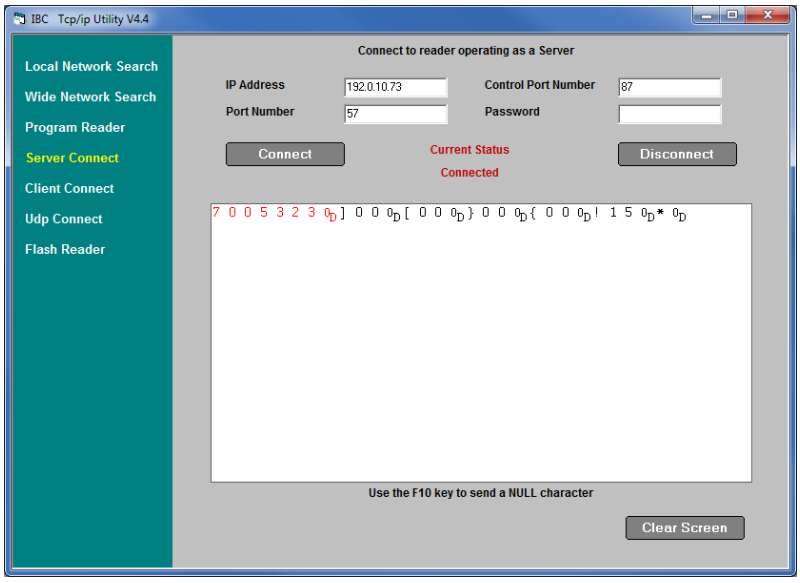
Windows 7: IBC TCP Utility V4.4

For Windows 7 users, run the test using the IBC TCP Utility.

1. In Windows, go to Start • Programs • IBC, to run the IBC TCP Utilit V4.4. It will open to the Server Connect page.
2. Change the IP Address to match the Smart J/Sprox J/qScan device you are testing.
3. Leave the Control Port Number (87) and Port Number (57) at the defaults, unless you changed them during initial set up. Click **Connect**. The Current Status should change to Connected
4. You should be able to swipe or scan your access card at the device location. The card number will display in the white box below in red, followed a carriage return (hex 0d).
5. Send commands directly to the device by typing the commands on the left into the white screen. The results on the right should occur.

Command	Result
]00<carriage return>	Green Light On
[00<carriage return>	Green Light Off
}00<carriage return>	Red Light On
{00<carriage return>	Red Light Off
!15<carriage return>	Relay On
*<carriage return>	Relay Off

5. The commands will show in black as you type. You can enter them one after the other or use the Clear Screen button at the bottom to start fresh before each one.



Windows XP: Access Control HyperTerminal Test

For Windows XP users, run the test through HyperTerminal..

1. In Windows, go to Start • Programs • Accessories • Communications • HyperTerminal.
2. You must establish a connection with the Smart J/Sprox J/qSCAN device. Open HyperTerminal, it will prompt you for a name and an icon for the connection. Name it *Test* and choose an icon. In the **Connect Using** field, select **TCP\IP**. Enter the IP address and port number of the Smart J/Sprox J /qSCAN device you are testing. The default port number is 57. Click **OK**.
3. You should now be able to swipe or scan your access card at the device location. The card number will display in the HyperTerminal screen. If the preamble is programmed properly, you will see the preamble and card number in the HyperTerminal screen.

Note: If you are using a Metrologic MS3480, skip step 4 and proceed to step 5.

4. The next step is to send the text files to the Smart J/Sprox J/qSCAN device. In HyperTerminal, select *Transfer* from the drop-down menu. Select *Send Text File*, and browse to the \VSI\RecTrac\misc\Access Control Test Files directory. Select *grnledon.tx*t and click **OK**. Perform this test with all six text files. Refer to the following table to confirm the desired results.

File Name	Result
grnledon.txt	Turns green light on
grnledoff.txt	Turns green light off
redledon.txt	Turns red light on
redledoff.txt	Turns red light off
testrelayon.txt	Actuates the relay
testrelayoff.txt	Un-actuates the relay

5. A Vermont Systems representative must verify via telephone that all six (6) tests are successful prior to proceeding with the access control software installation. Please call Vermont Systems Support to confirm the results of the HyperTerminal tests.
6. Log into RecTrac and configure your Access Control device in the RecTrac software.

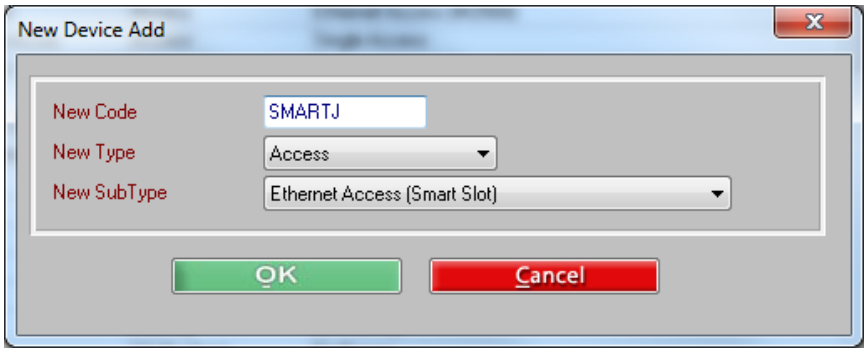
Section 11: Access Control Setup in RecTrac

Access Control User IDs and Menu Groups

1. From the main menu in RecTrac, go to File Maintenance • System • Users/Menus Maintenance • Security Maintenance. Enter the Master Password and click **OK**.
2. You will want to create an individual User ID and Menu Group to be used to run the Access Control Program. If you needed to create more than one device, you will also need to create one user for each device. Devices are mandated by channels on the order of eight (8). If you have eight (8) or fewer channels, you need only one (1) device. If you have between nine (9) and 18 channels, you will need at least two (2) devices, etc....
3. Highlight the Access Control user and click **Change**. If you do not have an access control user, you must create a new one (File Maintenance • System • Users/Menus Maintenance • Security Maintenance). If you do not have an access control menu group, you should create a new menu group as well (File Maintenance • System • Users/Menus Maintenance • Menu Group Maintenance).
4. Create a hot button that runs the Access Control program (pm0321.r) and place it on the Access Control Menu Group (File Maintenance • System • Users/Menus Maintenance • Menu Group Maintenance •< Select Menu Group and Change> • Home Screen). Press F1 for Help as needed.

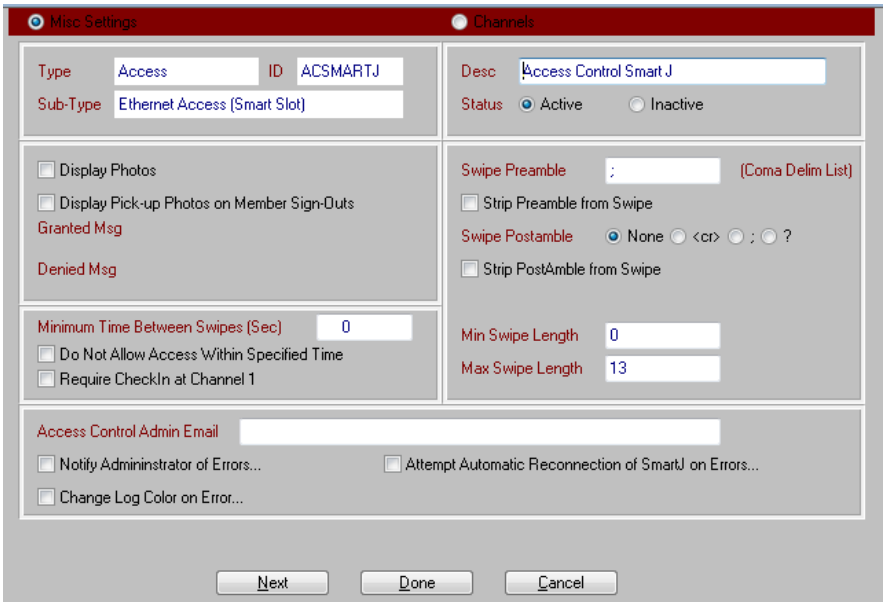
Create an Access Control Device

1. Go to File Maintenance • System • Other Maintenance • Printer/Device Maintenance. Click **Add** to add a new device. This will bring you into the following screen.



2 Enter a Device Code/ID in the New Code Field (i.e. SMARTJ, qSCAN1, ACCESS1, etc...).

3 Expand the **New Type** drop-down list and choose **Access**. In the **ID** field. Expand the **new Sub-Type** field and select **Ethernet Access (Smart Slot)**. Click **OK**.



4 Enter the device description in the **Desc** field and confirm that the Status is **Active**.

5 Toggling on **Do Not Allow Access within Specified Time** will prevent the access point to be opened again with the same pass within the **Minimum Time Between Swipes (Sec)**. If this toggle is not toggled on, the access point will open on every swipe but will only record a single visit for the same pass that is swiped during the **Minimum Time Between Swipes (Sec)**.

6 In the **Minimum Time Between Swipes (Sec)**, enter the minimum amount of time you require before the same card can be used again. See the previous step for additional information.

7 The **Swipe Preamble** should be the Percentage symbol (**%)** for Smart J/qScan or the number nine (9) for a Sprox J.

8 Select the **Strip PreAmble from Swipe** option if you do not want the preamble to be read as part of the encoded information. Typically, this toggle is on/enabled.

Note for MS7580: If using the MS7580, the swipe preamble should be an asterisk (*). Do NOT leave the preamble field blank.

9 The **Swipe Post amble** applies only if your barcodes vary in length.

10 Select the **Strip PostAmble from Swipe** if you do not want the post amble to be read as part of the encoded information. Typically, this toggle is on.

11 The swipe type established in RecTrac Static parameters determines the Min and Max Swipe lengths. The **Min Swipe Length** is the minimum number of characters that will be read. The **Max Swipe Length** is the maximum number of characters that will be read. If you are using RecTrac household

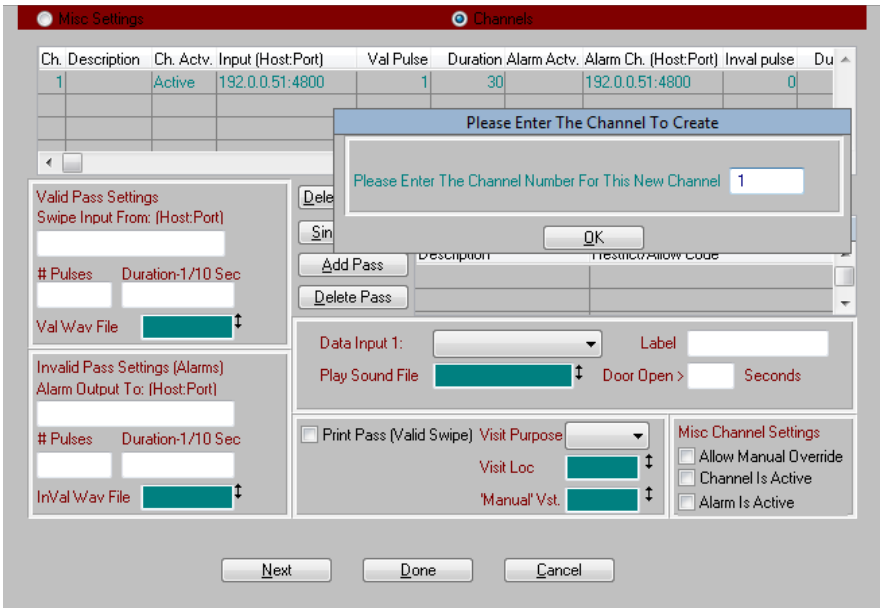
numbers, you will enter 11 as the Minimum Swipe Length and 11 as the Max Swipe Length. If you are using RecTrac household numbers with the lost card logic (2 digits), you will enter 13 as the Minimum Swipe Length and 13 as the Maximum Swipe Length.

12 Fill out the remaining fields as needed. Press **F1** for field level descriptions, if necessary.

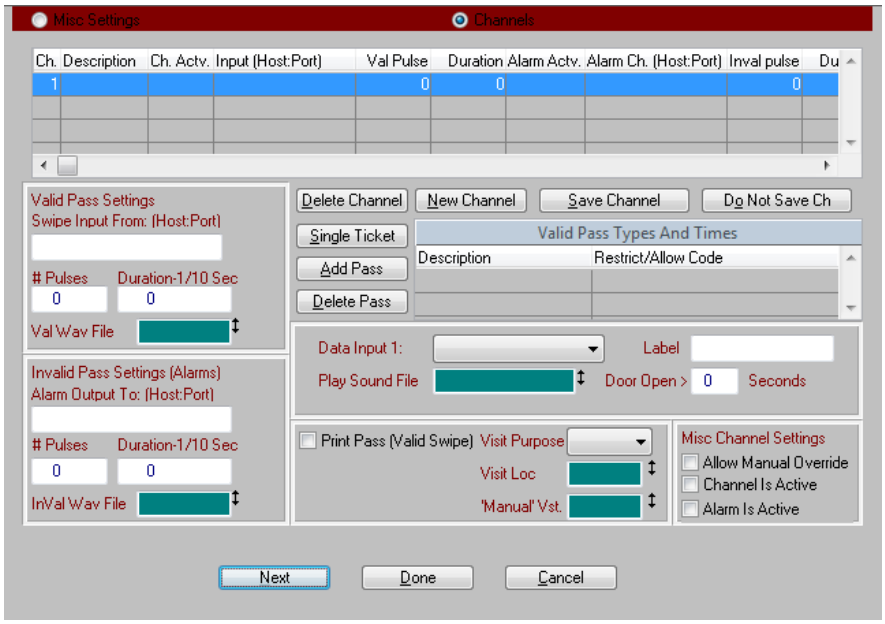
13 The next step is to configure each individual channel (access point) that this device controls. Click the **Next** button to advance to the **Channels** screen.

Access Control Device – Creating Channels

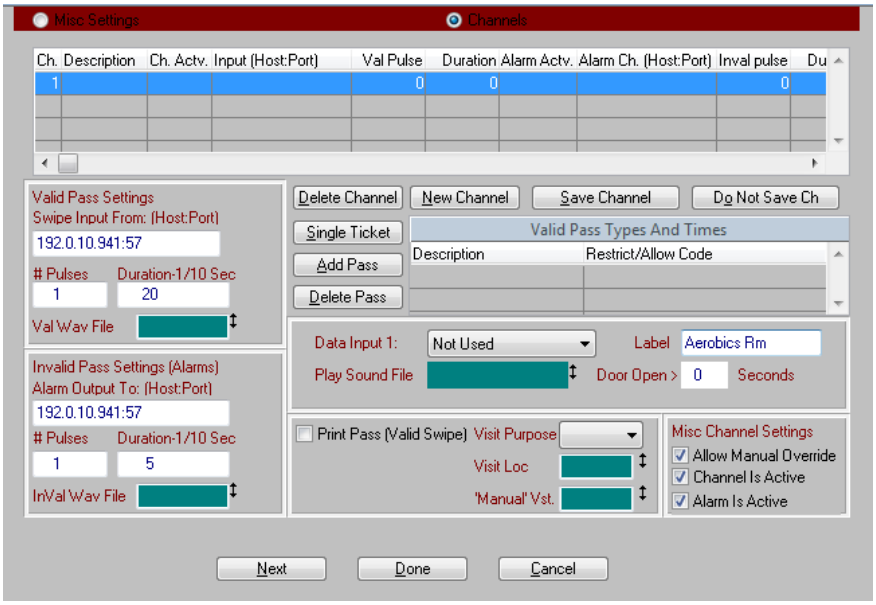
1 To create a channel for an access control device click the **New Channel** button.



2 In the **Please Enter the Channel Number For This New Channel** field, enter the first channel (i.e. "1"). Click **OK**.



3 The new channel will be positioned in the browser at the top of the screen. Set the specifications for this individual channel by selecting/ highlighting the channel.



4 **Valid Pass Settings**

In the *Swipe Input From: (Host:Port*) field, enter the IP address of the Smart J/Sprox J device, a colon, and then the port number of the device (i.e. 192.0.10.91:57). The default port number for the device is 57. Below the *Swipe Input From: Host:Port* field, enter the *# of Pulses* you wish the system to send on a valid swipe. The number of pulses is the number of times the relay is actuated for a valid swipe. Typically, the number of pulses is set to 1. In the *Duration field*, enter how long you want each of these pulses to last (measured in 10ths of a second). The duration is the length of time that the relay is actuated. *For example, a two (2) second duration is entered as 20*.

5 **Invalid Pass Settings (Alarms)**

In the *Alarm Output To: (Host:Port)* field, enter the same IP address and port as entered in the previous step. Enter the *# of Pulse*s and the *Duration*. For invalid pass swipes, the number of pulses is the number of times the invalid swipe indicator (red light) flashes. The duration is the length of time the indicator (red light) stays illuminated.

6 In the Misc Channel Settings section on the bottom right of the screen, enable the *Allow Manual Override* toggle if you want to have a button on the Access Control screen to allow clerks to manually open a door/turnstile controlled by access control.

7 Select the *Channel Is Active* option if the channel you are creating is active at this time. This toggle is typically enabled.

8 The *Alarm Is Active* toggle should be on if you want the system to use the Invalid Pass Settings (Alarms) information established above. This toggle is typically enabled.

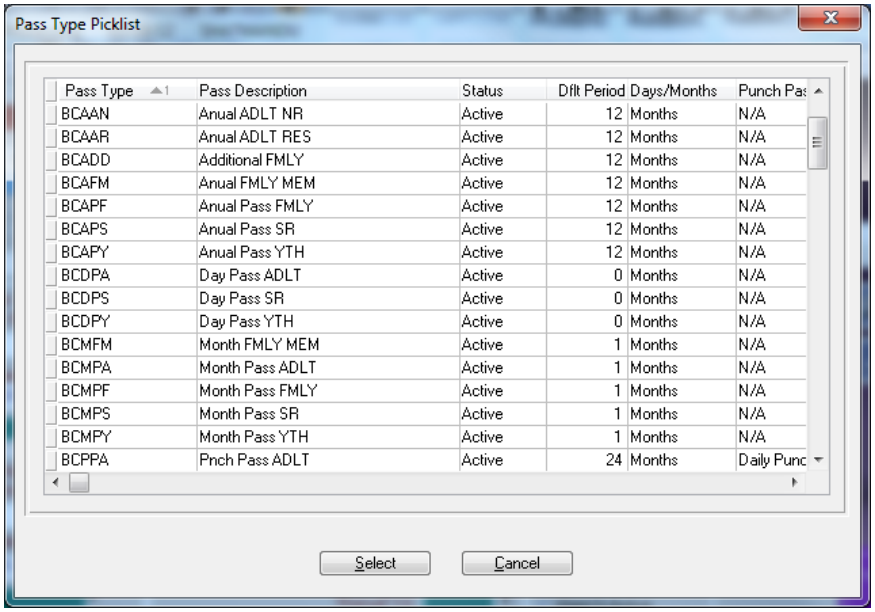
9 The *Data Input 1:* field should be set to **Not Used**. The other options would be used only if the Smart J allows for Sense Input.

If you have ordered a Sense Input Smart J, the 'Door Open Indicator' option or the 'Manual Override' option can be used. The Manual Override option allows for a button to be pushed that is connected to the hardware that will allow the door to be opened. The Door Open Indicator option will pass a signal back to the software indicating that the access point door is ajar.

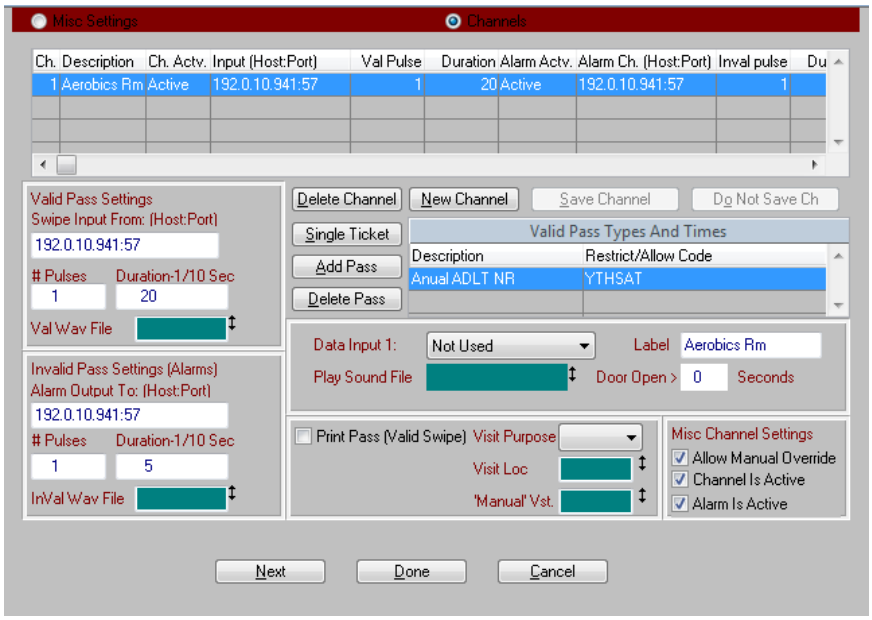
10 In the *Label fiel*d, enter the description of the access point that this channel controls. For instance, if setting up a channel for the aerobics room, enter "Aerobics Rm."

11 The Valid Pass Types and Times browser displays a list of valid pass types for the highlighted channel and time ranges for when those valid pass types can be swiped.

12 To add a pass type to the list, click the **Add Pas**s button. Right-click in the first available box of the Description column. This will display a pick list of all of your pass types.



13 Highlight the first pass type that will yield a valid swipe for this channel and click the **Select** button.



14 At the Channel screen, the pass type that was selected will be listed. Right click in the Restrict/Allow Code field and the restriction/allowance code that represents the time a pass of this type can be validated.

15 Repeat steps 12-14 for each pass type that should yield a valid swipe for this channel.

16 Click **Save Channel**. The settings for this channel will display in the channel browser.

17 To create more than one channel, repeat steps 1–16. Keep in mind that each device can hold up to eight (8) channels. For the ninth (9th) channel, create another access control device.

Press F1 as needed for additional field level descriptions.

18 Complete the channel setup and click **Done**.

Linking Access Control Devices

1. Go to: File Maintenance • System • Device Maintenance • Device Assignments.
2. Click the '+' next to User IDs, and then click the '+' next to By ID.
3. Highlight the user ID you created in the Access Control User IDs and Menu Groups section.
4. In the **Device Type** field, select *Access*. In the **Device To Add** field, choose the device created in the Creating an Access Control Device section.
5. Click the **Add To Linked Dev**s button to link the device to this user. The device type and name will display in the linked devices box to the right of the screen.
6. After the device is linked to the user, choose another access control user ID (if applicable) and repeat steps 3-5 for all other users/devices. When finished, click **Done**. You will return to the main screen.

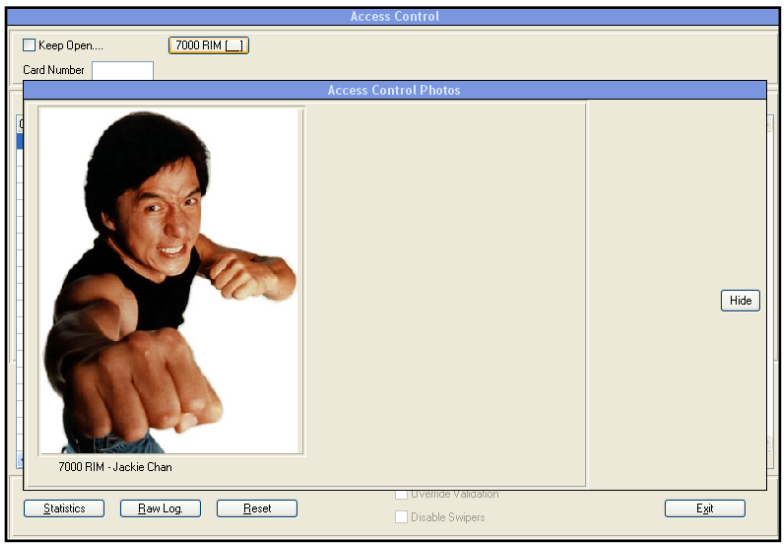
Section 12: Access Control Daily Processing

1. Log into RecTrac as the Access Control user and click on the **Access Contro**l hot button to start the access control program.

Note: Instructions for creating a desktop icon that logs directly into Access Control appear below.

2. View the entries list to verify that the Smart J/Sprox J devices are communicating with the access control program. As individuals swipe into an access control location, the log browser will record the pass numbers of the 20 most recent visits.
3. To manually override an access location without capturing the card number, click the button at the top of the screen that represents that access control location. To process a visit without using the bar code reader, enter the scan number into the **Manual Override Card Number** field and then click the button at the top of the screen that represents that access control location.
4. The **Statistics** button displays all swipe statistics since the last time you logged into the access control program.
5. The **Raw Log** is used for debugging purposes. If you want to view the raw data for a swipe, activate this option and then process a swipe.
6. The **Reset** button will restart your access device.
7. Click **Exit** to return to the RecTrac main menu.

Note: If selected, the **Display Photos** option on the Access device will display an individual's photo (if a photo has been captured for the person swiping into the access control point). You may see up to eight photos at a time. Therefore, if you have eight channels all linked to the same *Access* device within RecTrac, eight people may check-in at the same time; displaying all of their photos at once. The size of each photo depends on the actual number of customers checking in simultaneously. *For example, if four customers swipe in at once, their photos will be larger than if eight customers checked in at once.*



Logging into Access Control Directly from the Desktop Icon

To log directly into Access Control from the desktop icon, you must modify the RecTracLAN.ini file in the <x>:\VSI103\WebClientApps\VSI\RecTracLAN\ini folder on the access control machine. Additionally, you must add pm0321 as a startup parameter to the Permissions device linked to the Access Control User.

1. In Windows, browse to your RecTracLAN.ini file. Modify the SessionParams= line underneath the AppServerName=RecTrac LAN LIVE line, adding pm0321||zzz. Replace zzz with your access control user ID. This tells RecTrac Live to go directly to Access Control.
2. In RecTrac Device Maintenance, modify the Permissions device linked to the Access Control User ID. Add **pm021** to the *Program Allowed from Shortcut and Bypassing Security (Login Password)* field on the primary screen of the device. Press **F1** for a full description of the field and more information (and examples) regarding logins directly from the desktop icon

   The Access Control user must exit RecTrac and log back in for changes to take effect.

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Appendix A - Troubleshooting

No Success with Connectivity Test

If you are unable to connect to your Smart J/Sprox J/qSCAN device via the HyperTerminal Program (if Windows XP) or via the ICB TCP Utility V4.4 (Windows 7), check the following setup configurations. You should not be connected to your turnstile or door strike while performing the following steps.

1. From a DOS command prompt, attempt PINGing the device. If you are successful, unplug the CAT5e/6 cable from the Smart J/Sprox J/qSCAN device and PING again. If you are still able to PING the IP, that specific IP is in use elsewhere on your network. You must configure the device with a different IP address.
2. Via the Icbtcp44 configuration software, verify that the correct IP addresses are assigned to each device.
3. Ensure the IP of the device and the IP of your machine are in the same Subnet mask.
4. If you are using a firewall client software, it must be disabled when attempting to connect to the device using the HyperTerminal program.
5. You cannot have an open connection to the Smart J/Sprox J/qSCAN device within RecTrac. Make certain all other connections to this device are closed.
6. Once you can connect to the device, verify the connection with the test text files as explained in Section 10 of the *Access Control (Built-in NIC) Installation Guide*. Also, make sure the card is read when swiping. If these tests do not work, there is a problem with the physical setup.

Unable to Connect Via RecTrac

Once you are able to connect and test through the HyperTerminal program, you should be able to follow through with the RecTrac portion of the testing. If you cannot connect via RecTrac, follow this checklist.

1. Within Device Maintenance on your Access Control Device, confirm the IP and port on the Channels screen. The two should be separated with a colon. The port for Smart J/Sprox J/qSCAN (NIC) is 57.
2. Ensure the rest of your settings are correct according to Section 7 of the Access Control Installation Guide.
3. Validate the Access Control Device linked to your user and that you are currently logged in as the Access Control user.

If you are connecting to the Smart J/Sprox J/qSCAN device from within RecTrac, but you cannot effectively swipe a pass, check the following.

1. How many characters are encoded into your barcodes? Is it a fixed length or a variable length? You must validate this information on the Core Information screen of your Access Control Device in RecTrac.
2. Have you programmed the Smart J reader to recognize the preamble? If not, swipe the barcode labeled “Set % Preamble” in Section 8 and attempt to swipe within the Access Control Program again.
3. Have you programmed the qSCAN reader to recognize the command response? If not, swipe the barcode labeled “% UX0460” in Section 8 and attempt to swipe within the Access Control Program again.

Other Problems

If you still cannot connect to the Smart J/Sprox J/qSCAN device, below are more items to check.

1. Test the power to the Smart J/qSCAN.
2. Test CAT5e/6 cable to ensure it is working and functional. To test this, bypass the installed CAT5e/6 cable and run a temporary CAT5e/6 cable from the switch/hub to the Smart J/Sprox J/qSCAN device. Test again. If this works, your installed cable is bad. If it does not work, the problem lies elsewhere.
3. Maximum Ethernet cable length is 100m or 300’. An Ethernet Extender must be ordered for distances exceeding those maximums.

4 Did you install a MOV (Metallic Oxide Varistor) between each Smart J reader and the turnstile? See diagram on Page 24 12VDC power or Page 28 PoE power?

The MOV absorbs transients for circuit protection. It's usually wired across the line, and from line to ground and neutral to ground as well, similar to a "surge protector" strip. The MOV is wired downstream of the fuse, so that if the MOV shorts out (for example, due to a sustained overvoltage condition) the fuse will blow too. Metal Oxide Varistors are semiconductor materials. The varistors will offer short circuit when very high voltage pulses are encountered in electronic circuits thus protecting the readers. They are always connected parallel to the mains or where high voltages are encountered.

5 Is each Smart J reader receiving correct power from source? (5V, 12V, 24V) Check to verify voltage.

6 How close are the Ethernet cables to power wires?

7 Does the power provided by the turnstile contacts exceed 30VDC / 500MA?

8 Disconnect Relay Test – disconnect the wires from the turnstile that are connected to the Relay and then swipe magstripe and bar code cards several times. Does the reader work better?

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Appendix B - Pre-Installation Checklist

This checklist defines the Customer's and Vermont Systems' respective responsibilities when installing the VSI Access Control system. Because access control hardware can vary, you must consult with an electrician that specializes in circuit design and installation. You will also need to work with your Information Technology (IT) staff to discuss running CAT5e/6 cable to the access point(s). In addition, you must decide where the access control scanners will be located and how you will mount them.

Complete the fill-able form .pdf checklist that follows, and return it to Vermont Systems via email (support@vermontsystems.com) or FAX (802-879-5368).

Since access control readers are custom made, we will not order the readers until the checklist is received. The Vermont Systems section lists VSI's responsibilities; after reading and understanding each item, check the box next to that item. The Customer's Responsibilities section lists your responsibilities; check the box next to each item to acknowledge assuming responsibility for that item.

- Refer to the Glossary for definitions of some of the technical terms used in this document.
- Refer to the Access Control Diagrams section above as a reference for setting up the access control system.

If you have any concerns or questions, call Vermont Systems Customer Support: 877-883-8757.

Your Name: _____

Your Organization: _____

Date: _____

RecTrac Release:
Select from the drop-down list

Access Control Checklist - Vermont Systems Responsibilities

Checking the box next to each item indicates having read and understood that item.

VSI provides the software that interprets a scan and allows access if the scan is valid.

VSI will provide technical assistance to your chosen electric circuit and cabling installer.

VSI will encode the Smart J/Sprox J/qSCAN device with an IP address after discussing configuration options with your IT department.

VSI will configure the Smart J (if using this option) to ensure that bar codes and magnetic stripes read correctly.

VSI will configure the qSCAN (if using this option) to ensure that bar codes read correctly.

VSI will walk the customer through the HyperTerminal test. This test is used to verify that the cabling is complete, the circuits work correctly, and the door strike or turnstile can be opened using commands sent to the Smart J reader.

VSI provides phone-assisted or on-site configuration of the RecTrac access control software as quoted.

Access Control Checklist - Customer Responsibilities

Checking the box next to each item indicates having read and understood that item. The customer will install and mount *all* hardware for the access control system, including the following:

Decide whether door strike will supply the power or if the power will be supplied by the access control reader via PoE.

Order Smart J/Sprox J/qSCAN devices a minimum of 4 weeks in advance of installation.

Install door strike/maglock or turnstile.

Install Smart J/Sprox J/qSCAN near the access control point, where your customers can reach it.

If using proximity head, you will need to mount it and connect it to the Sprox J.

If using proximity head, you will need to notify VSI of the distance between the Sprox J and the proximity head, so that the Sprox J can be ordered with the correct cable length.

Complete the connection between the Smart J/Sprox J/qSCAN and the door strike or turnstile. An electrical contractor must design and physically complete this connection. If the door strike or turnstile does not have a built-in MOV (metal oxide varistor), the electrical contractor will need to build one into the circuit. If not using a Power Over Ethernet (PoE) Standard Smart J, and the power to the contacts is greater than 30VDC and or greater than 500mA, the contractor will have to design the circuit with an additional relay between the Smart J/Sprox J/qSCAN and the door strike or turnstile.

If you are using a PoE Standard Smart J/qSCAN, 12VDC is delivered to the doorstrike/turnstile via the PoE hub/switch.

Obtain an updated diagram that outlines the circuit between the Smart J/Sprox J/qSCAN and the door strike or turnstile. Go to the International Bar Code (IBC) website (www.interbar.com) and click the support link. In the wiring category, download the PDF labeled SA/STA reader wiring (with RS232 or RS422 interface).

Provide one 120VAC power outlets. The Smart J/Sprox J/qSCAN must be plugged into a 120VAC power outlet. In addition, provide any power required by your turnstile or door strike.

Notes: If using a Power over Ethernet Hub/Switch and PoE Standard Smart JX/qSCAN or PoE Non-Standard Smart JX/qSCAN, a power outlet is not needed for the scan devices.

100 Meters MAX distance communication using Ethernet cabling.

If using an Intelligent POE Switch device, it could extend the distance up to 200 meters.

Connect CAT 5e/6 cable between a network hub/switch and the Smart J/Sprox J/qSCAN device.

Once all the connections have been made and power is supplied to the access point, and the Smart J/Sprox J/qSCAN, the customer must notify VSI so that a HyperTerminal test can be performed approximately 4 weeks prior to your “live” date.

It is necessary that all access points are tested and pass the HyperTerminal test. If you decide not to configure the software using phone training and you are planning on having a Vermont Systems installer on site, travel will not be arranged until all access points pass this test. If a VSI installer is on site for the purpose of configuring your access device(s) software and wiring is incorrect and/or the HyperTerminal test fails, the customer is responsible for all expenses incurred by that installer (e.g., time and travel).

Access Control Checklist - Glossary

CAT 5e/6 Cable – Category 5e/6 network cabling, consisting of four twisted pairs of copper wire terminated by RJ45 connectors. Cat 5e/6 cabling supports frequencies up to 100 MHz and speeds up to 1000 Mbps. It can be used for ATM, token ring, 1000Base-T, 100Base-T, and 10Base-T networking.

Smart J – A device that handles all input functions (e.g., reading of the barcode or MagStrip) and output functions (e.g., controlling the relay that provides the signal to open the access device).

Sprox J – Device that handles all input functions (e.g., reading of the barcode, MagStrip or Proximity reader) and output functions (e.g., controlling the relay that provides the signal to open the access device).

qSCAN - A device that handles all input functions (e.g., reading of the barcode) and output functions (e.g., controlling the relay that provides the signal to open the access device).

HyperTerminal – A software program that allows you to communicate to another computer or node on the network.

Proximity Head – A scanning device that is set up near an access point. Reads information from a badge that contains a chip encoded with information.

Power Over Ethernet (PoE) – Power Over Ethernet (PoE) is a technology that integrates data, voice and power on standard Ethernet infrastructure providing new option for power distribution. This allows telephones, wireless LAN access points, surveillance cameras and other embedded appliances to receive power as well as data over existing CAT5e/6 cabling. Formally approved as an international standard, Power over Ethernet is established as an economical, safe power distribution method and is already deployed in corporations throughout the world.

> **Notes:** 100 Meters MAX distance communication using Ethernet cabling.
>
> If using an Intelligent POE Switch device, it could extend the distance up to 200 meters.

PoE Standard Smart J/qSCAN –A PoE Standard Smart J receives its power from a PoE Hub/Switch or Power Injector. This Smart J/qSCAN also provides 12VDC to the door strike or turnstile with 500ma maximum. The device handles all input functions (e.g., reading of the barcode or Smart J only magstripe) and output functions (e.g., controlling the relay that provides the signal to open the access device). This device comes with the non-isolated relay.

PoE Non-Standard Smart J/qSCAN –A PoE Non-Standard Smart J receives its power from a PoE Hub ore Switch or Power Injector. This Smart J/qSCAN does NOT provide voltage to the door strike or turnstile. The device handles all input functions (e.g., reading of the barcode or Smart J only magstripe) and output functions (e.g., controlling the relay that provides the signal to open the access device). This device comes with the isolated relay.

Isolated Relay - with an Isolated relay, the POE reader does NOT send power to the doorstrike or turnstile.

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Appendix C – Electric Strikes vs. Magnetic Locks

Magnetic Locks

All magnetic locks(aka: mag locks) will work with DC current only, usually 12 to 24 volts, so never connect a magnetic lock to AC current at any voltage.

All magnetic locks are fail-safe, which means that they need a constant source of power to remain locked. If power is removed, the lock will open.

All mag locks are silent even when powered and locked. Electricians recommend at least 1200 pound pull magnetic locks for normal sized doors.

Caution is recommended regarding use of magnetic locks with respect to fire and smoke safety. Always check Local Authority Having Jurisdiction (LAHJ) during installation planning.

Electric Strikes

Electric strikes are often used for “buzz in” type systems. They can be 12, 24, or even higher voltage and they can take AC or DC current or some both.

They may be fail-*safe* or fail-*secure*. A fail-*safe* electric strike needs power to keep it locked, whereas, a fail-*secure* strike remains locked even without power.

Fail-secure is the most common type used. A fail-secure strike remains locked from the outside even if no power. For egress or getting out, a door knob or lever on the lock allows for safe exit.

If you need the “buzzer” sound, select an AC strike and AC power source or transformer. If you do not want the “buzzer” sound, select a DC power source or transformer. The DC strike is almost silent when it releases, except for a slight “click” sound.

If you want to use a DC strike or magnetic lock, but still want the “buzzer” sound, you can connect a tiny buzzer in parallel between the power supply and the electric strike or magnetic lock to make buzzer sound when the lock releases.

Source: The Keyless Lock Store.

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