D9210B Access Control Interface Module
Operation and Installation Manual

About This Manual

This manual assumes that you have basic security system installation skills such as measuring voltages, stripping wire, making proper wire connections, and checking phone lines. It also assumes you are familiar with the proper installation of Radionics Control/Communicator panels and the related programming tasks.

The material and instructions in this manual have been carefully checked for accuracy and are presumed to be reliable. However, Radionics, Inc. assumes no responsibility for inaccuracies and reserves the right to modify and revise this manual without notice.

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> Radionics, Inc.
> c/o Technical Writing Department
> 130 Perinton Parkway
> Fairport, NY 14450

FCC Notice

This equipment generates, uses and can radiate radio frequency energy. If not installed in accordance with the manufacturer's instructions, it may cause interference to radio communications. It has been tested and found to comply with the specifications in Subpart J of Part 15 of FCC Rules for Class B Computing Devices.

If this equipment causes interference to radio or television reception — which can be determined by turning the equipment on and off — the installer is encouraged to correct the interference by one or more of the following measures: 1) Reorient the antenna of the radio/television, 2) Connect the AC transformer to a different outlet so the control panel and radio/television are on different branch circuits, 3) Relocate the control panel with respect to the radio/television.

If necessary, the installer should consult an experienced radio/television technician for additional suggestions, or send for the "Interference Handbook" prepared by the Federal Communications Commission. This booklet is available from the U.S. Government Printing Office, Washington DC 20402, stock no. 004-000-00450-7.

Regulatory Listings

UL 294	UL 1076	UL 609	FCC 15B
UL 365	UL 1610	UL 864	CSFM

D9210B Operation & Installation Manual

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Tables and Figures

The D9210B Access Control Interface

Figure 1. D9210B Access Control Interface Module

Terminal Blocks. The D9210B comes with three banks of terminal blocks for connecting the D9210B to its power source, the panel and associated readers and relays.

Relay. A removable (model D136) relay provides a dry contact single pull, double throw output.

Dipswitch. The D9210B dipswitch has six on-off switch settings. Setting these switches allows each unique D9210B to be programmed for a specific address.

EPROM. The D9210B is controlled by a programmable read-only memory microprocessor.

Diagnostic and Status LEDs. The D9210B has a series of light emitting diodes (LEDs) for identifying operational and diagnostic states. These are listed below.

LED	Action	State
Operational Monitor (Green)	LED blinks on and off	System is operational
	LED is on or off (solid)	System is off or not operational
D0 Reader (Green)	LED rapidly blinking	Card data executing
	LED is off	No card data is being received
D1 Reader (Yellow)	LED rapidly blinking	Card data executing
	LED is off	No card data is being sent

Table 1. D9210B Diagnostic and Status LEDs

Materials Included

Radionics ships the D9210B Access Control Interface module pre-assembled from the factory with a power supply, in its own can, or as a unit less can. You will receive the following parts with your package depending upon what model is ordered, (see Ordered separately).

- D136 removable relay mounted on the board.

- Battery Leads (for the D9210BLC).

- 1K Ω 1/2 watt end of line resistor.

- Literature Pack containing: D9210B Operation and Installation Manual, D9210 Program Entry Guide, ACCESS Program Record Sheet, and Power Supply Installation Instructions.

- Hardware pack containing: three #6x3/8 self-tapping sheet metal screws to secure the module on the mounting skirt or the enclosure. Two strain relief cable ties.

Ordered Separately

The D9210B Door Controller can be used with the Radionics D7412 (supports 2 doors) or D9412 (supports 8 doors) Control/Communicator security panels and associated control keypads and access control readers. Following are the available options.

- D9210BLC: The D9210BLC (up to 4) can be installed in the same enclosure as the control panel using the mounting screws and fasteners. Two additional modules can be mounted using the D136 brackets. Radionics recommends that you use a separate power supply for the D9210Bs to isolate them from other SDI devices.

- D9210BC: The D9210BC is a complete unit mounted on a mounting skirt, (D9201M) with a switchable 12/24 VDC (500-1500 mA) power supply, 24 VAC/40 VA fused transformer, and (1) D9210B. It can be installed with another D9210BLC in a single D8103, D8109 or D8108A enclosure.

- D9210B: The D9210B is mounted in a 5(W)x8(L)x3(H) enclosure and can be mounted as a standalone unit in the field.

- Compatible Readers: Readers are not shipped with the unit (see Table 3).

Listings and Approval Information

Underwriters Laboratories (UL). The D9210B, when used with the D7412 or D9412 panels, is listed by UL for use as part of an Access Control System; Local, Police-Connect, Central Station, or Proprietary Burglar Alarm System; and a Commercial Fire Alarm System. In addition to the manual, refer to the D7412/D9412 installation documentation regarding Burglar Alarm Grades and Fire Alarm services supported. The D9210B is a Signaling Device Subassembly also suitable as a Burglar Alarm Unit Accessory Subassembly and Access Control Unit Subassembly.

Other Listings and Approvals. FCC 15B, CSFM (highrise)

Before You Begin

Thank you for choosing our product. We have made an effort to identify the key steps for installing the D9210B successfully. To ensure that your installation goes smoothly, follow the installation steps in the order presented.

System Planning. Before proceeding, draw your system layout on a sheet of graph paper. Also, review the architect and engineering drawings (if available). This will help you set addresses, mark the units, and route/tag wires. The drawing should include the Control Panel, the D9210B, the trip switches for RTE/REX, doors, readers, control centers assigned to the same area as the D9210Bs, and the wiring run.

Have the following documents handy as you read through this manual:

• D9210B Program Entry Guide (32207)

• ACCESS Program Record Sheet (32208)

• Control/Communicator Program Entry Guide and Program Record Sheet

• Security System Owner's Manual (71-06633-000)

• Power Supply Installation Instructions

You should be familiar also with the operation of the D5200 programmer or the Remote Account Manager (R.A.M.) remote programmer.

Step 1: Mounting the Enclosure and Installing the D9210B

Enclosure Placement. There is a 500' maximum distance allowed between the D9210B and Weigand card readers. There is a 5000' maximum distance allowed between the D9210B and the panel. Consider placing the enclosure where a technician can gain easy access for troubleshooting the unit and where wiring can be routed easily.

Preparing Knockouts. The D9210B requires six primary wire runs to be routed to the enclosure (see Table 2). To identify the proper knockouts required, determine from which direction the panel, reader, door contact, door strike and the request to exit/enter wires will be coming. Run the necessary wiring throughout the premises and pull the wires into the enclosure. Avoid splicing and grouping wires together. Knock out the tabs for the wiring prior to mounting the enclosure.

Mounting the Enclosure. When mounting the enclosure, place it against the wall and use a "level tool" to ensure the unit is level. Align the enclosure mounting holes with the vertical wood beams, usually 16" apart, to ensure a solid mount. With a pen or pencil, make marks where the top mounting holes expose the surface.

Set the enclosure down and insert the mounting screws where the marks exist for the top left and right mounting holes. Leave a 1/4" gap between the wall and screw head so the enclosure can be hung on the screws.

> **IMPORTANT!** If vertical wood beams are not available, be sure to use the proper screw anchors and hardware to mount the unit.

If any of the knockouts require that wire be run behind the wall, mark the holes and punch/drill them out prior to permanently installing the enclosure. After the holes have been knocked out and the enclosure is level, use all five mounting holes (three on the top and two on the bottom) to install the enclosure.

Step 2: Pulling and Marking the Wires

Running wire. Use Table 2 to estimate the wire bundle size for your knockouts and where to mount the D9210B. Tag your wire runs to prevent confusion during installation and troubleshooting. Figure 2 shows the wiring for a typical D9210B installation.

Purpose	Suggested Wire Tag	Approximate Diameter	Recommended Wire Type	Recommended Color Code
Power/SDI data	Tag A	1/4 "	4/22 awg quad (2500 feet)	SDI: A (Green) B (Yellow)
			4/18 awg quad (5000 feet)	Pwr: + (Red) - (Black)
RTE power/input*	Tag B	1/4"	4/22 awg quad	Green/Black
REX power/input*	Tag C	1/4"	4/22 awg quad	Yellow/Black
Strike power*	Tag D	3/8"	2/16-18 awg zip	Red
Door contact*	Tag E	1/8"	2/22 awg twist	White
Reader*	Tag F	3/8"	6/22 awg conductor (500 feet)	12 VDC: Red 5 VDC: Orange COM: Black D1: White D0: Green LED: Brown Buzzer: Yellow
Buzzer*	Tag G	1/8"	2/22 awg twist	+(Red), - (Blk)
Emergency Exit*	Tag I	1/8"	2/18 awg twist	Blue
Power Supply Transformer	Tag J	1/4"	2/18 awg zip	Brown
* Be sure to multiply the wires by the number of D9210Bs in the enclosure.				

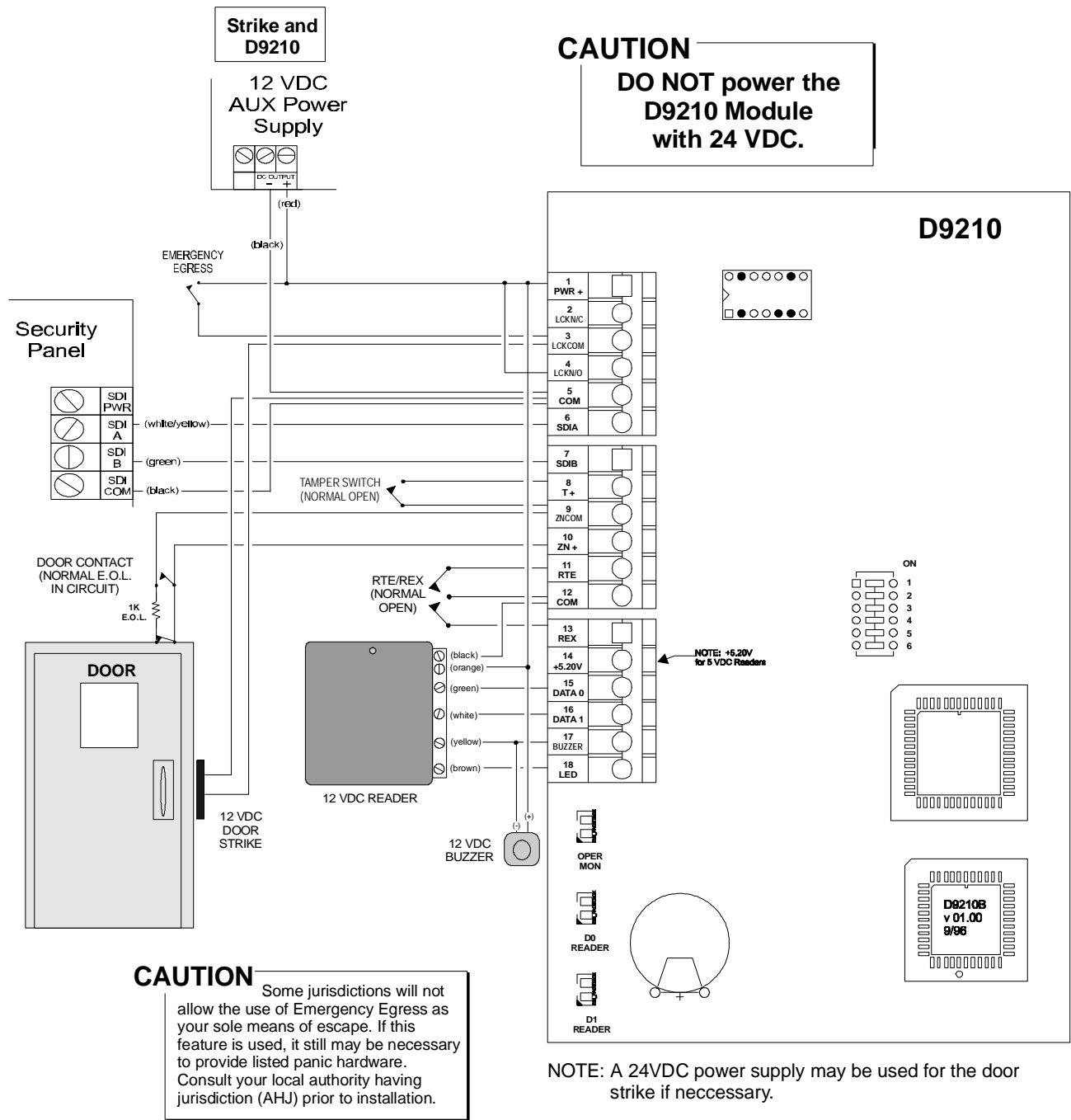**Table 2. Typical Wire Planning Chart for the D9210B**

Figure 2. Wiring Diagram for Typical D9210B Installation

Step 3: Mounting

> **CAUTION** Do not install or replace a D9210B while it is connected to live power circuits. The D9210B should be powered down until it is ready to be tested.

D9210BLC

1. Mount the D8103, D8109 or D8108A enclosure on a flat service.
2. Install another D9210LC to the mounting skirt (optional) prior to step 3.
3. Hang the mounting skirt in the enclosure by aligning the rectangular tabs of the enclosure with the rectangular knockouts on the mounting skirt.
4. Insert the #6x3/8" screw on the bottom tab of the mounting skirt and tighten 1/4 turn to seat it. This completes the mounting of the skirt in the enclosure.

D9210B

1. Remove the cover of the D9210B by loosening the two cover screws.
2. Remove the required knockouts prior to replacing the cover.
3. Mark the holes provided for mounting the bottom half of the unit to a wall or ceiling.
4. Screw the provided screws in to the marked service and allow a 1/4" gap between the surface and bottom of the screw.
5. Hang the unit and secure the screws. Replace the cover and cover screws.

D9210BLC

1. The unit can be installed in a D8103, D8109 or D8108A enclosure by matching the three plastic mounting anchors to the three hole foot prints provided around the sides of the enclosure (4).
2. The unit can be added to a D9210BC by matching the three plastic mount anchors to the available three hole foot prints below the factory installed D9210B.
3. To secure the unit, use the three #8-3/4" screws provided.

Step 4: Door Contact (Onboard) Point, Terminals 9 and 10

Description. The D9210B monitors the sensor loop between the input terminal 10 and the common terminal 9 for normal, shorted, or open conditions. This loop is provided for a door contact. The door contact can be programmed as a perimeter, interior, or 24 hour burglar alarm point.

See the *D9210B Program Entry Guide (32207)* for assigning a point to the door controller and the panel *Program Entry Guide* for the point types.

Point Sensor Loop. Install a 1k Ω resistor at the door contact, not at the terminal of the input. This will provide supervision against grounds on the loop. You can connect only one contact, that being the door, to this input.

Point Tolerances. The following voltages determine the condition of the on-board point. Use the point common as your (-) reference when measuring the point (+). Set your meter for 10 to 24 VDC range.

Open Loop = Greater than 8.7 VDC, but less than 13.8 VDC. (open wire, e.o.l. resistor not in circuit)

Normal Loop = Greater than 3.9 VDC, but less than 5.8 VDC. (e.o.l resistor in circuit)

Shorted Loop = Greater than 3.0 VDC, but less than 2.0 VDC. (wire to wire short, e.o.l. resistor not in circuit)

Step 5: Door Lock, Terminals 2, 3 and 4

Description. A removable relay (model D136) provides a dry contact single pull double throw output. Some strikes require a closed circuit to unlock the door while others require an open circuit to unlock the door. The relay will support 12 VDC @ 2A or 24 VDC @ 2.5 A or 12/24VAC @ 40 VA.

Common Input (3) = This terminal will be used for the input to power the strike. Use the (+) side of the power to the strike via this input. Connect the (-) side directly to the strike.

Lock N/C (2) = Provides Input power to device with relay de-energized.

Lock N/O (4) = Provides Input power to device with relay energized.

<u>Relay Installation</u>. The D136 Relay is installed into the relay socket of the D9210B. Follow these steps for installing the relay:

1. Locate the relay socket on the D9210B board (shown in Figure 3).
2. Place the relay into the socket. The plug-in relay has two legs on the bottom and three legs on the top. When inserting the relay, ensure that it is oriented as shown in Figure 3.
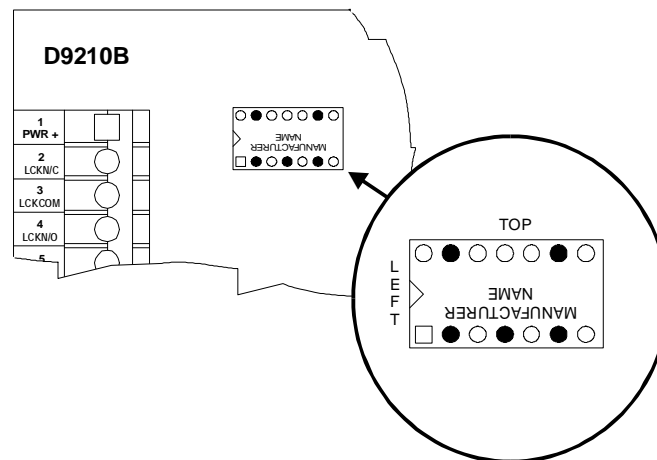
Figure 3. Relay Installation

Step 6: Request to Enter (RTE), Terminals 11 and 12

Description. When terminal 11 is momentarily shorted to terminal 12, the strike is activated and the door point is shunted.

Shunt Only: An option is provided that only shunts the point when this input is momentarily shorted. To activate the shunt, but not the strike, program ***RTE Shunt Only?*** as YES.

Step 7: Request to Exit (REX), Terminals 13 and 12

Description. When terminal 13 is momentarily shorted to terminal 12, the strike is activated and the door point is shunted.

Shunt Only: An option is provided that only shunts the point when this input is momentarily shorted. To activate the shunt, but not the strike, program ***REX Shunt Only?*** as YES.

> **IMPORTANT***:* REX must not be used for emergency exit applications. NFPA 101 requires that a UL listed panic device be used to provide direct power from the standby power source. (see Figure 2 for wiring an emergency exit device). Check with your local Authority Having Jurisdiction (AHJ) prior to installing your system.

Step 8: Enclosure Tamper Switch, Terminals 8 and 9

Description. A short to this loop will generate a *Missing Trouble Point ###* for the point number assigned to the D9210B. With this tamper point faulted, the D9210B will still function.

Connect a N/O tamper switch to terminals 8 and 9. Upon opening the enclosure, the tamper switch will short the inputs and generate the Missing Trouble Point message.

> **TROUBLESHOOTING TIP**: `SDI FAILURE ###` and `MISSING PT ###` are reported to the central station when the SDI bus has failed or the D9210B is missing.

Step 9: Connecting the Card Reader, Terminals 12, 14, 15, 16, 17, and 18

Description. These terminals provide connection for a standard 26-bit Wiegand™ reader.

Compatible Readers: Table 3 specifies the UL listed Wiegand™ readers and associated tokens that are compatible with the D9210B. Radionics guarantees only these readers will function properly and only the readers noted below can be used in UL certified systems.

Model	Voltage	Description	Tokens	Cards	Format
D8201/ D8201W	+12 @ 35 mA	Proximity, Low Profile, Black or White (W)	D8238 proximity	D8239 proximity	26-bit
D8203/ D8203W	+12 @ 35 mA	Mullion Proximity, Black or White (W)	D8238 proximity	D8239 proximity	26-bit
D8227	+5 @ 35 mA	Insert, Magnetic Stripe	N/A	D8230/D8240 magnetic stripe	26-bit
D8221	+5 @ 25 mA	Swipe	N/A	D8231 sealed magnetic	26-bit
D8223*	+12 @ 175 mA	Proximity, Gray	N/A	D8236 proximity cards	26-bit
D8224	+5 @ 80 mA	Proximity, slim, Gray	N/A	D8236 proximity cards	26-bit
D8229	+5 @ 120 mA	Keypad reader	N/A	N/A	26-bit

* 12 V power from D9210B source

Table 3. UL Listed Compatible Readers for the D9210B

Readers can be mounted up to 500' from the D9210B module. A typical reader connection is shown in Figure 2.

Terminal 1, +12 VDC. The *red wire* is used to provide **12 VDC readers** with power. Current is limited only by the source providing the power.

Terminal 12, Common. The *black wire* provides the common for the reader. (Use this terminal when comparing other reader voltages.)

Terminal 14, +5.25V. The *orange wire* is used to provide **5 VDC readers** with power.

Terminal 15, Data 0. The *green wire* is the carrier of binary one (1) pulses from the reader.

Terminal 16, Data 1. The *white wire* is the carrier of binary zero (0) pulses from the reader.

Terminal 17, Buzzer. The *yellow* wire is the common for the reader buzzer or external buzzer.

Terminal 18, LED. The *brown wire* is the common for the reader LED. (Note: The reader buzzer or common for the external buzzer can be used here as in option).

Step 10: Setting the Dipswitch and Tagging the Unit

The D9412 panel supports up to eight door controllers using all eight address settings. The D7412 supports up to two door controllers using the first two address settings. Each D9210B uses one of eight addresses. **Addresses can not be duplicated**. Because the D9210B is always supervised, two D9210B modules having the same address will not function and SDI failures will occur.

Fill out the Program Record Sheet. Be sure the program record sheet for this door controller contains the area assignment, address assignment and control center assignment.

> TECH TIP: Whenever possible, be consistent when numbering doors, control centers, and areas. This will help when programming a system with more than one door. (Example: Assign Door 1 to Area 1 and Control Center 1.)

The D9210B dipswitch with factory default settings (all ON) is shown in Figure 4. Table 4 shows the serial device reporting address settings for each door controller. Table 4 also shows dipswitch settings for Test and Fail modes.
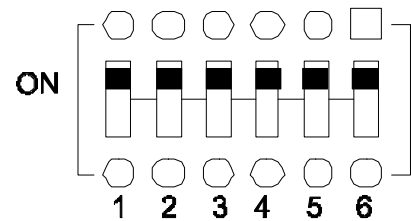
Figure 4. D9210B DIP Switch (Factory Settings)

		Door Controller Address			Fail Mode	Test Mode	Memory Dump
		1	2	3	4	5*	6*
Serial Device							
Control Center Display	**Central Station Modem IIIa[2]**						
D9210 #1	SDI #33	ON	ON	ON	---	---	---
D9210 #2	SDI #34	OFF	ON	ON	---	---	---
D9210 #3	SDI #35	ON	OFF	ON	---	---	---
D9210 #4	SDI #36	OFF	OFF	ON	---	---	---
D9210 #5	SDI #37	ON	ON	OFF	---	---	---
D9210 #6	SDI #38	OFF	ON	OFF	---	---	---
D9210 #7	SDI #39	ON	OFF	OFF	---	---	---
D9210 #8	SDI #40	OFF	OFF	OFF	---	---	---
SDI Fail Mode							
SDI Fail – Door Unlocked		---	---	---	ON	---	---
SDI Fail – Door Locked		---	---	---	OFF	---	---

* Switches 5 and 6 must stay in the "ON" position.

Table 4. D9210B Dipswitch Settings

Step 11 Connecting Power and SDI, Terminals 1, 5, 6, 7, and 9

> **CAUTION:** Do not connect 24 VDC or non-isolated [from the strike] 12/24 VAC of the D9210B.

Reference Figure 5 for the following connections.

**Terminal 1, Pwr +12 VDC IN**. The red wire provides power to the D9210B, 12 VDC readers and buzzers.

Terminal 5, Common. The black conductor provides electrical common between the D9210B and the power source.

> **Technical Tip**: **IMPORTANT!** Always ensure a common exist from the D9210B to the panel so the power supply and panel have the same ground reference. Use any common terminal on the D9210B, 5, 9 and 12 for connections.

Terminal 6, SDI A PANEL DATA (INPUT). The yellow conductor from the panel connected to this terminal. This is where data from the panel is received by the D9210B.

Terminal 7, SDI B PANEL DATA IN (RETURN). The green conductor from the panel is connected to this terminal. This is where the data from the D9210B is returned back to the panel.

Terminal 3, LCKCOM. For 24VDC strikes provide the input power here from the power supply. For 12 VDC strikes, provide the input power here from the power supply.
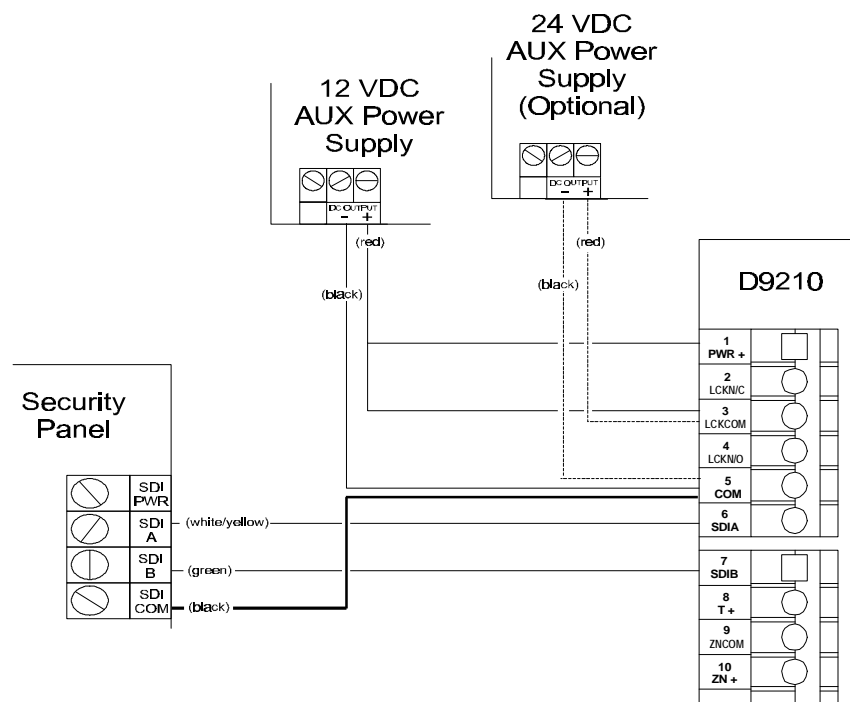
> **TECHNICAL TIP**: It is very important to include your strike current. Radionics recommends you use an auxiliary power supply to isolate door controls and ensure the integrity of the system.

Figure 5. Power Supply and SDI Connections

Step 12: Programming and Activating the D9210B

Description. The D9210B needs to be assigned with an area before it will communicate properly with the panel. In addition, the dipswitch settings and the power need to be connected.

The dipswitch settings in Table 4 determine the address of the D9210B. At the top of the ACCESS program record sheet, the address number (noted next to the dipswitch setting in Figure 4) will determine which parameters for the door controller are sent.

To activate the D9210B, follow the instructions in the D9210B Program Entry Guide (32207). Use the *ACCESS* Program Record Sheet (32208) to match the door to the proper address and to ensure that the door is assigned to the proper area.

Step 13: Testing the D9210B

Description. The D9210B comes shipped with a default program that will let you run a quick test upon installing the unit. Go through the following items to verify the D9210B is functioning properly. If you have problems, see the trouble shooting section.

D9210B: Verify that the Operational Monitor LED is pulsing approximately once every second. This indicates the microprocessor is running. Go to the [UNLOCK DOOR] function. A number from 1 to 8 should appear for the door controller. If an "F" appears, the unit has failed.

Zone: Using the Control Center, verify the point is normal when the door is closed, the point goes off normal when the door is opened and a shunt is not applied, and that the point stays normal upon opening the door on a valid access granted.

Strike: Read a valid token to activate the strike. If tokens have not been added, use the [DOOR CONTROL], [DOOR UNLOCK] mode to cycle the strike. In addition, you will cycle the strike when you test the RTE/REX inputs (if shunt only is not yes).

RTE/REX: Fault these inputs to activate the strike. The default for the strike time is 10 seconds. Test each separately.

Buzzer: The buzzer should have sounded on each strike activation. Also hold the door open past the normal shunt time and ensure the "Extend Buzz" functions.

Reader: The reader LED will be red upon powering up the D9210B. During the above tests, it will turn green anytime the strike is activated.

To verify the reader, check and see that the D1 and D0 LED's blink rapidly while a card is passed through the reader or a token is held up to the proximity reader.

For other LED functionality, see Table 5, "LED Troubleshooting" .

Troubleshooting

LED TROUBLESHOOTING. Use the following reader and D9210B LED patterns to troubleshoot the D9210B. It is important to use the [DOOR CONTROL] function to validate actual door states when troubleshooting.

Reader Action	If Reader LED is	then Door State is	so LED will toggle
Idle reader LED			
	Red	Locked	
	Red	Secured	
	Green	Held Open	
	Continuous Red/Green	Locked on Fail (Dipswitch optional) Unlocked on Fail (Dipswitch optional)	SDI disconnected, D9210B is not programmed with an area, D9210B faulty.
Access Granted			
	Red: Valid token to activate strike.	Locked	Red to Green for duration of strike time.
	Green: Valid token will not activate strike because strike is latched to allow access.	Held Open	Green to Red to Green
Access Denied			
	Red: Valid token format not added.	Locked	Red to Green to Red (pattern repeats twice)
	Red: Valid token but level is turned off.	Locked	Red to Green to Red (pattern repeats twice)
	Red: No access allowed regardless of level because door is secured.	Secured	Red to Green to Red (pattern repeats three times)
Custom Function			
	Red: Valid token will run.	Locked/Secured	Red to 1 second Green to Red
	Green: Valid token will run.	Held Open	Green to 1 second Red to Green
Adding IDs			
	Red: Adding new token	Learn Mode while door is secured or locked.	Red to 2 second Green back to Red
	Red: Adding token that exists.	Learn Mode while door is secured or locked.	Red to Green to Red to Green to Red
	Green: Adding token that exists.	Learn Mode while door is held open.	Green to 1 second Red to Green
	Green: Adding new token	Learn Mode while door is held open.	Green to 2 second Red to Green

Table 5. LED Troubleshooting Guide

Operational Primer

The D9210B is a fully supervised, addressable SDI bus device that allows access control integration for the D9412 (8 doors) and D7412 (2 doors) panels. Each D9210B can store up to 986 user tokens (300 tokens for D7412), each with a different access level for each door. Authority for access is controlled by the level of the user, the time of day, the state of the door and the armed state of the area that the D9210B is assigned to. Each of the authority restrictions can be controlled through automatic and manual functions.

Users can be added to the system either by local programming using the D5200, remote programming using the Remote Account Manager (R.A.M.), or by adding tokens using the Add User function through the control center(s).

The D9210B is not programmed using a local or remote programmer. The D9210B must be connected to the SDI bus to function properly and receive operational programming parameters and user data.

Outputs.

Dry contact SPDT relay for 12/24 volt strikes. The D136 removable relay provides a Normally Closed (NC), Common (Input voltage) and Normally Open (NO) output. When the relay is energized, the outputs switch to an opposite state.

Buzzer Output. The buzzer output activates when the door sequence begins or if the door is left open for an extended period of time. It provides common to the negative side of the buzzer.

+5 VDC reader output. The +5 volt DC output is for ID readers that require a lower voltage than the +12 VDC readers. It provides a maximum of 150 mA.

Inputs.

SDI input and output. SDI A (yellow) receives data from the SDI A of the panel. SDI B (green) returns data to the SDI B of the panel.

12 VDC input. This input is used to power the D9210B and provides a connection for the 12 VDC reader and 12 VDC buzzer.

Supervised zone input for the door contact. The zone input on the D9210B is used for the door contact that is physically mounted on the door to which the strike is connected.

The input can be configured for shorts/opens on faults but is normal only when the 1000k ohm resistor is in the circuit.

Unsupervised tamper input. The unsupervised tamper input is normal when open. Upon a short, the point number assigned to the supervised zone is reported as a `MISSING PT###` report.

Unsupervised Request to Enter (RTE) and Request to Exit (REX) inputs. The RTE input and REX input are normally open inputs sharing the same common terminal. When momentarily shorted (500 ms) by a dry contact input will initiate the door sequence. Typical applications include a N/O momentary push button or a N/O momentary relay activation from a Door motion detector device.

The REX input generates the Door Request to Exit and is used to *exit* the area assigned to the D9210B without having to use an ID. The RTE generates the Door Request to Enter and is used to *enter* the area assigned to the D9210B.

Programming **REX Shunt Only** and **RTE Shunt Only** allows you to initiate only the shunt and buzz when the RTE or REX inputs are shorted. This eliminates the need for a strike and would be used in applications where a push bar is used to open the door.

It is advisable to assign a point number to the device used to activate the RTE and REX inputs (such as an infrared with addressable ZONEX). This ensures that the device is supervised.

Unsupervised reader. The Weigand Reader input is a five wire input that supplies +5 VDC (use the +12 VDC terminal for 12volt readers), negative, ground activation for the reader LED, (D1) and (D0) inputs for the card data.

Two LEDs are provided to indicate that data is reaching the inputs from the reader when an ID is read. The IDs do not have to be valid to illuminate these LEDs, but the IDs do need to have a format that the reader can decipher.

Normal Door Sequence. The Normal Door Sequence of the D9210B is initiated by a valid access granted (User ID) or door request (RTE/REX). This initiates the strike, shunt and buzz time to activate the strike, shunt the point and create an event reporting the door sequence has begun.

When the door is held open past the normal door sequence time, an extended door sequence time is initiated. This extended time extends the shunt and re-activates the buzzer. If programmed, [CLOSE DOOR #] will display at the control center assigned to the door.

The normal door sequence will not activate if the interlock point is in an off normal (open or short) condition.

The **INTERLOCK POINT** can be assigned to multiple door controllers. This is useful for applications that require doors to not activate when a point is faulted until the interlock point is normal.

Door States. There are four door states for the D9210B. These door states can be controlled through the control center, the Remote Account Manager (R.A.M.), scheduled events (Skeds) and automatic programmable functions in the D9210B parameters.

Locked Door. This state is considered a normal door state in that the strike is holding the door closed.

Unlock Door. This state allows the door to be opened for free access.

Secure Door. This state will not allow access unless a Fire Unlock occurs.

Fire Unlock. This state allows free access no matter what the previous door state or armed state is. This is a programmable option that can be used to allow free access into the building upon a fire alarm.

Automatic Functions and Door State. The D9210B has two automatic functions that control door state based on the armed state of the area:

Auto Door. With this function as Yes, the door will be locked when the area is armed and unlocked when the area is disarmed. Perimeter armed is considered an armed state for this function.

Disarm on Open. With this function as Yes, a user with valid access rights will activate the strike and disarm the system after the door is opened. With this function as no, the area will disarm upon the strike activation.

Access Levels

Armed State rights Users can be prevented from access depending upon the armed state of the area that the D9210B is assigned to. M-indicates the user has access no matter what the armed state, P- indicates the user has access as long as the Area is perimeter armed or disarmed and D-indicates the user only has access when the area is completely disarmed.

Disarm Access Level. Users are allowed to disarm the area with an access id. Care should be taken to ensure that the user first has the authority to activate the strike based on the Armed State. P-indicates the user will disarm the area from Master to Perimeter Instant. D- indicates the user will disarm the area from Master or Perimeter to the disarmed state.

Skeds

Unlock Door . Provides an automatic free access at a specific time period. Requires a Normal Door Sked to return the door to normal. Can be overridden by manual control at the control center.

Secure Door. Provides an automatic prevention of access at a specific time period. Requires a Normal Door Sked to return to normal. Can be overridden by manual control at the control center.

Lock Door. Provides an automatic lock door state at a specific time to return the door to normal requiring valid cards/tokens to allow access.

Message Suppression. Provides an automatic message off/on function at a specific time for Door and Access Granted or No Entry messages.

Access Ctl Level On/Off. Provides an automatic on/off for each of the 14 levels dealing with the access control. Once a level is turned off, all doors are affected.

Modular Design. The D9210B can be replaced by simply disconnecting the existing unit and connecting a new one with the same dipswitch setting. The panel will download stored data to the new unit when it is powered up and connected to the SDI bus.

Diagnostics. Patterns of LED activation will indicate door state and ID validity. Other indications include SDI failure. (see Table 5, LED Trouble Shooting Guide).

Basic Features

- Highly reliable and simple to use
- Provides direct interface to 26 bit Weigand card readers.
- Interfaces with the D9412 (up to eight) or D7412 (up to two) Control/Communicator panels
- Can be installed up to 5000 feet away (using 18AWG or 2500 feet away using 22 AWG) from the panel
- Onboard buzzer output
- Card data LEDs indicators for low card data when valid format is read
- Operational LED which indicates the CPU is functioning and unit is powered
- Removable onboard relay for 12/24 VDC/VAC power
- Option to unlock or lock door upon SDI bus failure
- Supervised Onboard point
- Request to Exit and Request to Enter inputs that can have a shunt only option
- Easily programmable entry/exit door strike and shunt control
- Four door states: Locked, Unlocked, Secured, Fire Unlock.
- Disarm states using a token
- Pre-warn for holding door open too long
- Disarm system before or after a door opens
- Automatic Unlock door on disarm, Locked Door when armed
- Optional Deactivate strike when the door opened
- Interlock point assignment to prevent access until interlock point is normal.
- 1000 Cards/Tokens
- Fourteen programmable levels of access authority
- Users can be added or deleted remotely, locally and with Command Center

Displays and Reports

- Access Granted with user ID and User Name
- No Entry with user ID and door User Name
- Request to Enter with door point text
- Request to Exit with door point text
- Door Held Open with door point text
- Door Locked with door point text
- Door Normal with door point text
- Alarm Point ### with door point text
- Trouble Point ### with door point text
- Missing Point ### with door point text
- Please Close Door with door point text

Door Release Application

The D9210B can be used for door release functions. When used in this configuration, the strike relay contacts must be supervised. This can be accomplished with the use of an end-of-line relay commonly used for smoke detectors. Connecting the D9210B for this application is shown in Figure 6.

Program *Point Index* in the *POINTS* handler as Supervisory with **Point Response** as "A" (Supervisory on Open and Trouble on Short.

The power supply, end-of-line relay, and the D9210B must be in the same enclosure or adjacent enclosures connected via conduit not longer than 20 feet.

NOTE: When using the D9210BC, you must use the D8004 Transformer Enclosure for the power supply transformer.
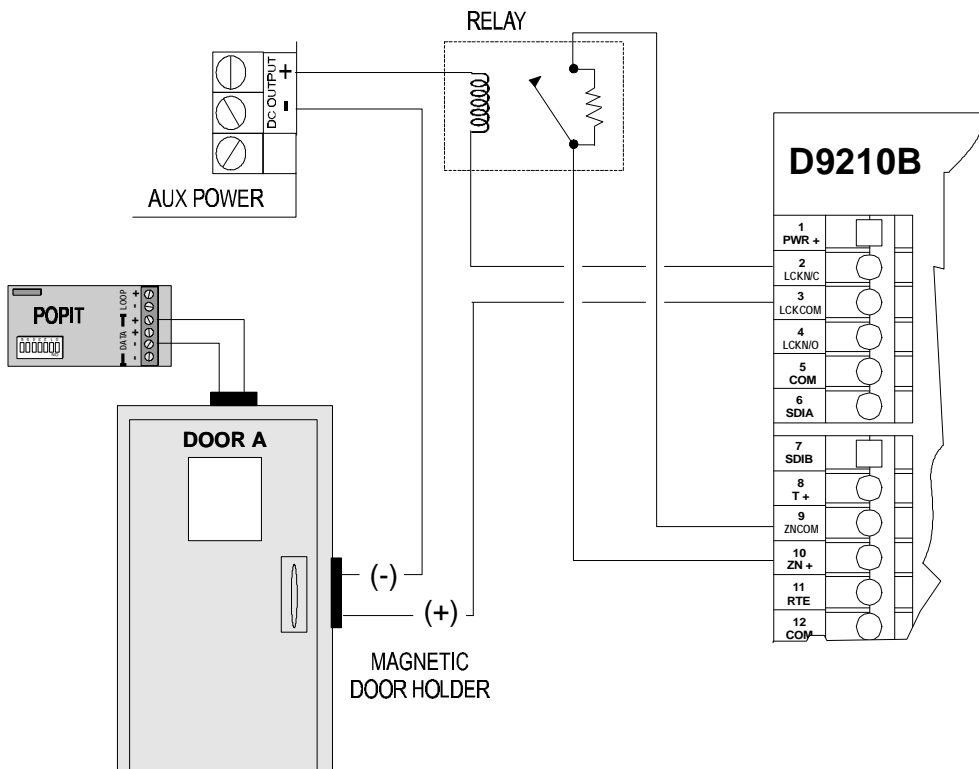
Figure 6. D9210B Door Release Application Connections

D9210B Terminal Quick Reference and Electrical Specifications

	Terminal	Description	Electrical Specifications
1	PWR +	12 VDC power input	• 10.2 - 13.8V [depending on reader draw: 110 mA (board) + 150 mA (reader max) = 260 mA]
2	LCK N/C	Continuity with LCK COM when relay is off.	• 12/24 V @ 2.0 A max (30 VDC max)
3	LCK COM	Input to feed LCK N/C (T2) and Lock N/O (T3)	
4	LCK N/O	Continuity with LCK COM when relay is on.	• 12/24 V @ 2.0 A max (30 VDC max)
5	COMMON	Common Input (power for lock and device)	
6	SDI A	Data from the panel to the D9210B	• high impedance bi-directional differential bus
7	SDI B	Data back to the panel from the D9210B	RS-485 @ 9600 baud
8	T +	Positive input for Tamper, normally open	• open collector input 1K pull up • V in < 1.8 V on > 3.2 V off
9	ZNCOM	Common input for on-board point	• 1K Ω termination resistor between T9 and T10 required
10	ZN +	Positive Input for on-board point	
11	RTE	Input from Request to Enter (RTE) momentary short device	• open collector input 1K pull up • V in < 1.8 V on > 3.2 V off
12	COM	Common input for REX/RTE devices	
13	REX	Input from Request to Exit (REX) momentary short device	• open collector input 1K pull up • V in < 1.8 V on > 3.2 V off
14	+5.2 V	Power out to 5.2 VDC card reader.	• V out 5 V $\pm$ .25 V for 20 - 140 mA load • 150 mA maximum continuous
15	DATA 0	Data 0 input from card reader (activates D0 LED)	• high impedance differential inputs with 10 K pull up to +5.2 V
16	DATA 1	Data 1 input from card reader (activates D1 LED)	
17	BUZZER	Buzzer common upon strike activation.	• sink up to 35 mA from 5 - 14 VDC source • output impedance is 100 Ω
18	LED	LED common upon card read response and strike activation.	• sink up to 35 mA from 5 - 14 VDC source • output impedance is 180 Ω

Table 6. Terminal Quick Reference Guide and Electrical Specifications

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