Model 781 "Easy Entry" Wiegand Input Keypad

Description

The 781 Wiegand Input keypad is an enhanced Security Command Keypad that allows you to connect Wiegand format access control readers to DMP Command Processor™ panels. Any proximity, magnetic stripe, or other reader technology that provides a Wiegand data format can be used with the 781 keypad.

How the 781 Works

The 781 keypad works by allowing users to present a card or token to an access control reader that in turn sends data containing their user code to the keypad. The 781 reads the user code, verifies its authority with the panel, and then powers its on-board Form C relay releasing a door strike or magnetic lock. The door being controlled by the relay must then be opened within five seconds to start the 30 second "Soft-Shunt™" entry/exit timer. The user code sent by the card reader can also be entered manually by the user through the keypad.

Zone three Request to Exit

You can also connect a normally open PIR or other motion sensing device to zone three (White/Orange pair) on the 781 to provide a hands-free request to exit capability to the system. When the user is sensed by the device, its contacts short zone three and cause the keypad relay to activate for five seconds. During this time, the user must open the protected door to start the 30 second "Soft-Shunt™" entry/exit timer. If the door is not opened within five seconds, the relay restores the door to its locked state.

Door contact loop with Soft-Shunt™

Connect the wiring from the controlled door's normally open or normally closed contact to Loop #2 (White/Red pair) on the keypad harness. Once the door strike relay is activated, the user has 5 seconds to **open** the door connected to Loop #2. The loop is then automatically shunted for 30 seconds.

12 VDC access control readers

Connect the Red and Black power wires from the reader to the power wires from the panel. These connect in parallel with the keypad power wires. Connect the White data wire from the reader (Data 1) to the White wire on the 5-position keypad harness. Connect the Green data wire from the reader (Data 0) to the Green/White wire on the 5-position keypad harness.

5 VDC access control readers

Connect the Black power wire to the Black Common wire from the panel. Connect the Red power wire from the reader to either a separate power supply or to a 5 volt regulator placed in series with the Red power wire from the panel. Connect the White data wire from the reader (Data 1) to the White wire on the 5-position keypad harness. Connect the Green data wire from the reader (Data 0) to the Green/White wire on the 5-position keypad harness.

Once all the wire connections are made, mount the keypad using appropriate size anchors and the four enclosed #6 machine screws. Use the two #6 x 32 flat head screws when mounting the keypad on a single gang box.
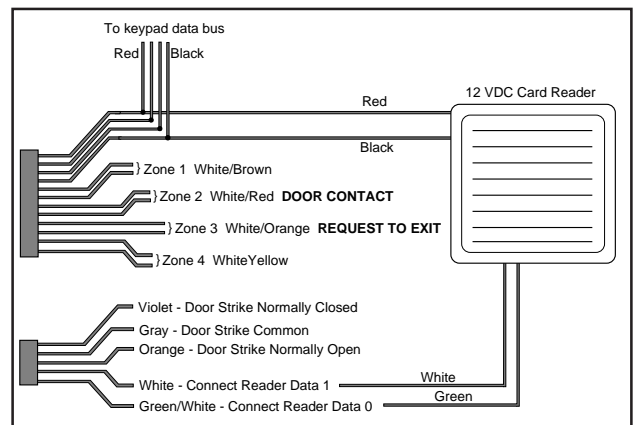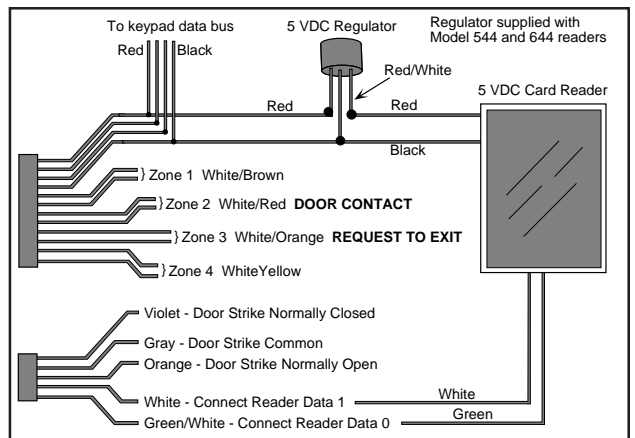

Figure 1: 12 VDC reader wiring


Figure 2: 5 VDC reader wiring with regulator

Harness Color Code

Panel		**Loops**		**Door Strike**	
Red	- Auxiliary Power	White/Brown	- Loop 1	Violet	- Normally Closed
Yellow	- Data Transmit	White/Red	- Loop 2	Gray	- Common
Green	- Data Receive	White/Orange	- Loop 3	Orange	- Normally Open
Black	- Ground	White/Yellow	- Loop 4	White	- Reader Data 1
				Gr/Wh	- Reader Data 0

Address Programming

Each 781 keypad must be programmed with its own device address. This addressing is done through the use of slide switches located on the left side of the keypad's printed circuit board. To set the switches, use a small slotted screwdriver and gently slide the switch to either the up or down position according to the address table to the right.
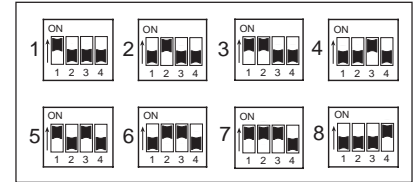
Programming Access Cards into the System

Once the 781 keypad is installed and operational, you can begin programming user information into the panel. To do this, access the **USER MENU** and select **USER CODES?.** Then choose **ADD.** When the keypad displays **ENTER CODE: -** , present the user's card to the reader. The 781 works by reading the 4 or 5 digit user code from the data sent by the access control reader. For more information, refer to the Security Command User's Guide section on adding, deleting, and changing user codes.

Panic Signal

The 781 keypad can also provide users with a panic feature by programming loop 1 as a panic loop and installing a 1k ý resistor across the White and Brown wires. Afterwards, pressing the 7 and 0 keys simultaneously shorts loop 1 and sends a panic report to the panel. The loop returns to normal when you release the keys. This feature can be disabled by cutting the jumper **J3** on the lower right corner of the keypad circuit board.

Electrical Specifications

The 781 keypad operates on 6 to 16 VDC at 100mA maximum with an unlit display. Current increases to 125mA with the display lit. You can install the 781 on individual wire runs of up to 500' using 22 gauge wire or up to 1,000' using 18 gauge wire. Below are specifications for individual readers:

MP-5365 MiniProx® Proximity Reader -	60mA at 12 VDC
PR-5355 ProxPro® Proximity Reader -	60mA at 12 VDC
TL-5395 ThinLine II™ Switch Plate Reader -	60mA at 12 VDC
544 Insertion Mag Stripe Reader -	35mA at 5.5 VDC
644 Pass-Through Mag Stripe Reader -	35mA at 5.5 VDC

Additional Power Supply

If current draw for all keypads connected to the panel exceeds the panel's output, you can provide additional current by adding an auxiliary power supply. Connect all keypad common wires to the negative terminal of the power supply. Run a jumper wire from the power supply's negative terminal to terminal 10 of the panel. Connect all keypad power (+12 VDC) wires to the positive terminal of the power supply. Do NOT connect the positive terminal of the power supply to any terminal of the panel.
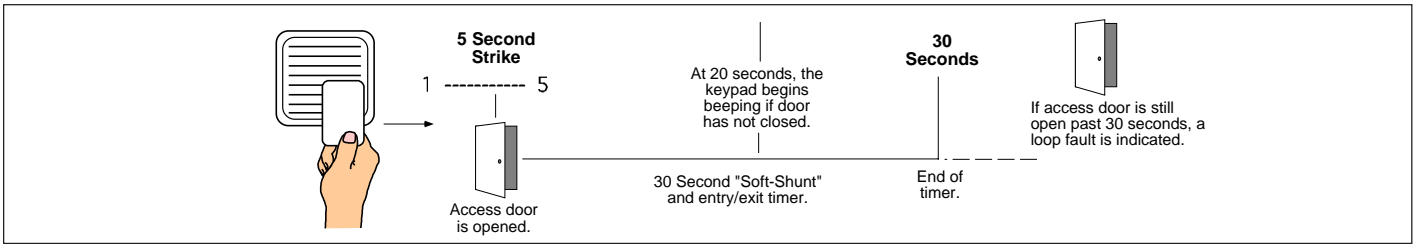
AC LED

The 781 keypad also contains a green AC power LED. This LED is off when AC power to the panel has been interrupted or while the panel is resetting.

Door Strike Relay Specifications

The 781 keypad provides one Form C (SPDT) relay for controlling door strikes or magnetic locks. Three wires, violet, gray, and orange, provide for connection to the N/C, Common, and N/O contacts of the relay. The contacts are rated for 1 Amp at 24 VDC or 0.5 Amp at 120 VAC.

Door Strike Relay Operation

As soon as the user code sent from the reader has been verified by the panel, the keypad Door Strike relay activates for five seconds. During this time, the access door (connected to loop #2) must be opened to start the 30 second entry/exit timer and loop soft shunt. See the timeline shown below.


5 Second Strike 1 ---------- 5

At 20 seconds, the keypad begins beeping if door has not closed.

30 Seconds

If access door is still open past 30 seconds, a loop fault is indicated.

Access door is opened.

30 Second "Soft-Shunt" and entry/exit timer.

End of timer.

User's Guide

The 781 works in three different modes: Door Strike, Arming and Disarming, and Entry Delay. All of the examples below assume that **CLOSING CODE** is **YES** in the panel's programming.

DOOR STRIKE

Area and All/Perimeter Door Strike - From the Status List, present your card to the reader. Once it is validated by the system, the Door Strike relay activates. See **Door Strike Relay Operation** above. Home/Away systems only activate the Door Strike relay when arming and disarming.

MON 2:30 PM
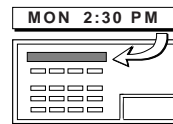
While the keypad is in the Status List, present your access card.
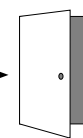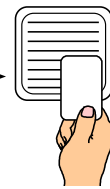
The relay activates for five seconds during which time you can open the door.

Once you open the door, you have 30 seconds to exit and close the door before the loop 2 Soft-Shunt expires.
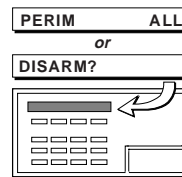
ARMING AND DISARMING

Area system Arming and Disarming - Press Command. The keypad displays **ARM   DISARM**. Press the Select key under either option. The keypad displays **ENTER CODE: -**. Present your card to the reader. Once it is validated by the system, all areas accessible by you arm or disarm automatically and the Door Strike relay activates.

ARM   DISARM   →   ENTER CODE: -   →   ALL?   NO   YES
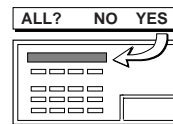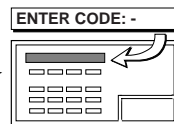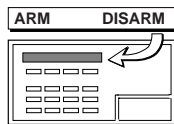
Select NO to arm or disarm individual areas. Select YES, or simply wait, and the keypad will automatically arm or disarm all areas for which you are authorized.

All/Perimeter system Arming and Disarming - Press Command. The keypad displays **PERIM ALL** (when arming) or **DISARM?**. Press the Select key under the option. The keypad displays **ENTER CODE: -**. Present your card to the reader. Once it is validated by the system, both areas arm or disarm automatically and the Door Strike relay activates.

PERIM   ALL
or
DISARM?

The system arms or disarms the areas and activates the Door Strike relay.

Home/Away system Arming and Disarming - Present your card to the reader. If the system is armed, once the card is validated all areas are disarmed**.**

If the system is disarmed when you present your card, once it is validated all areas are armed in the AWAY mode.

ENTRY DELAY

All Systems - Once the protected door is opened and the entry delay starts, the keypad displays **ENTER CODE: -**. Present your card to the reader and, once it is validated, the system disarms all areas accessible by you and activates the Door Strike relay. Area systems provide a delay to allow selected areas only to be disarmed. See Arming and Disarming above.

ENTER CODE: -
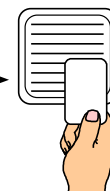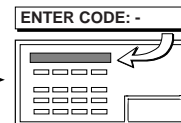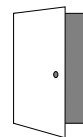
The system disarms the areas and activates the Door Strike relay. Area systems allow a delay for you to select only certain areas. See Arming and Disarming.

Using the access reader for user menu access

You can also use a Wiegand type reader connected to the keypad to access the User Menu when the **MENU? NO YES** display is shown.

Self-Test Diagnostics

The 781 keypad allows you to test its system keypad functions at any time.

To test the keypads:
- Disconnect the red (+12 VDC), yellow, and green keypad wires from the panel.
- Twist the yellow and green keypad wires together. Reconnect the red wire to the panel.

The keypad display shows: **TEST PROCEDURE.**

TEST 1 DISPLAY TEST

This test begins immediately and scrolls a series of characters across the display allowing you to visually inspect each display segment.

To go to the next test, press the COMMAND key. To repeat a test, press the ARROW key.

TEST 2 KEY TEST

This allows you to check each key for proper operation. The display shows: **PRESS KEY—** . As you press and hold each key, its name is displayed.

TEST 3 LOOP TEST

This allows you to check each keypad loop for proper operation. The display shows: **L1 L2 L3 L4**.

Following each loop number is the status of the loop. (O) = Open, (–) = OKAY, and (S) = Short.

TEST 4 FUNCTION TEST

This allows you to check the AC LED, door strike relay, and keypad tone for proper operation. The display reads: **LED RLY TONE**. To test each function, press the SELECT key beneath its name. The keyboard backlight turns off during this test.

TEST 5 ADDRESS TEST

This test displays the address selection of the keypad. The display changes if the keypad address switches are changed. A **?** (question mark) is displayed if an address selection above 8 has been made. To end the Address Test, press COMMAND. The display reads: *** * TEST END * ***.

Ending the Test

Disconnect the red (+12 VDC) wire from the panel. Separate the yellow and green keypad wires and reconnect them to the panel. Connect the red wire to the panel. Press COMMAND to start the keypad's normal operation.

Additional Diagnostics

If at any time during normal operation a keypad cannot detect polling from the panel on the green keypad wire, the display reads: **SERVICE REQUIRED**. This indicates the green wire may be broken.

If at any time during normal operation a keypad detects polling but its particular address is not being polled, the display reads: **NON-POLLED ADDR**. To clear this display, check the address selection on the keypad or the number of keypad addresses you've assigned during system programming.