734W Wiegand Interface Module

Description

The 734W Wiegand Interface Module allows you to add WiFi network access control capability to XR100/XR500 panels using proximity or mag-stripe card readers. The 734W provides a fast, safe and secure connection to your local WiFi network for AES encrypted TCP communication with the control panel and allows fast verification of user codes presented at the reader for door access. The 734W operates at 12/24 Vdc from the power supply supporting the magnetic lock or door-strike at the door and provides a 10 Amp Form C relay contact for lock control. Four input zones are provided to allow connection of nearby burglary devices. For local annunciation, a programmable speaker and a variety of switched ground annunciators are provided to connect to sounders. In addition, the 734W provides LEDs to indicate door strike, Wiegand inputs, and power to the module.

The 734W provides a keypad programming connection to use a standard DMP LCD keypad for initial WiFi network setup. Programming can be completed using the keypad or from the XR100/XR500 panel.

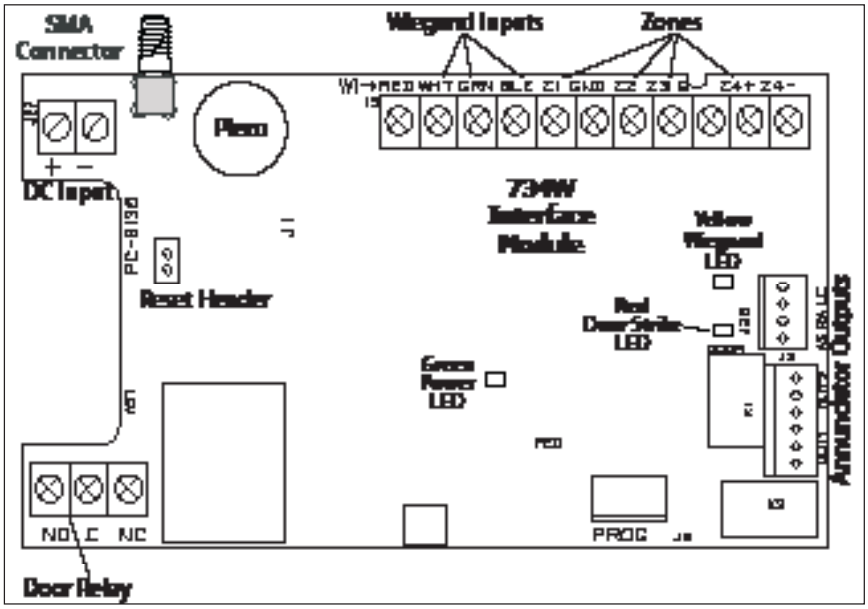

Figure 1: 734W Wiegand Interface Module

Mounting the 734W

The 734W ships installed in a decorative, high-impact plastic housing that mounts directly to walls, backboards, or other flat surfaces. For easy installation, the 734W housing back and ends have wire entrances. The bottom contains multiple screw holes for mounting on single-gang switch boxes. It is recommended to mount the 734W near the protected door.

Magnetic Lock and Door Strike Wiring

You can control door strikes and magnetic locks by using the Form C relay on the 734W module. Use an additional power supply to power door strikes and magnetic locks. Refer to Figures 2 and 3 for wiring information.

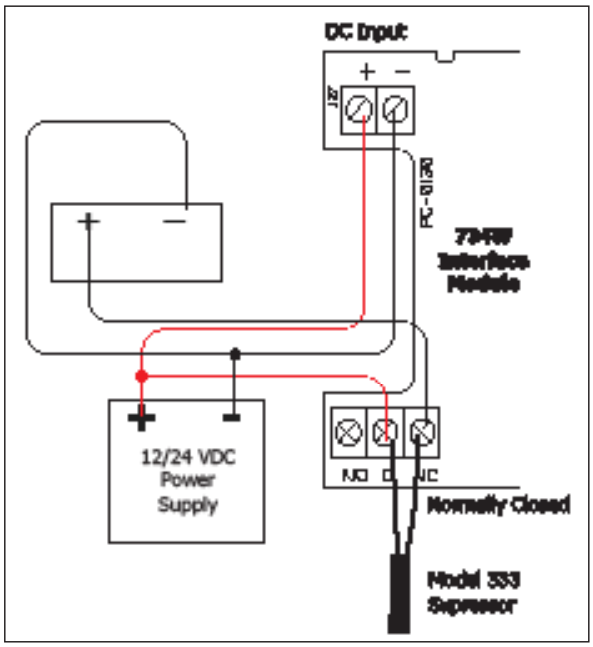

Figure 2: 734W Magnetic Lock Wiring

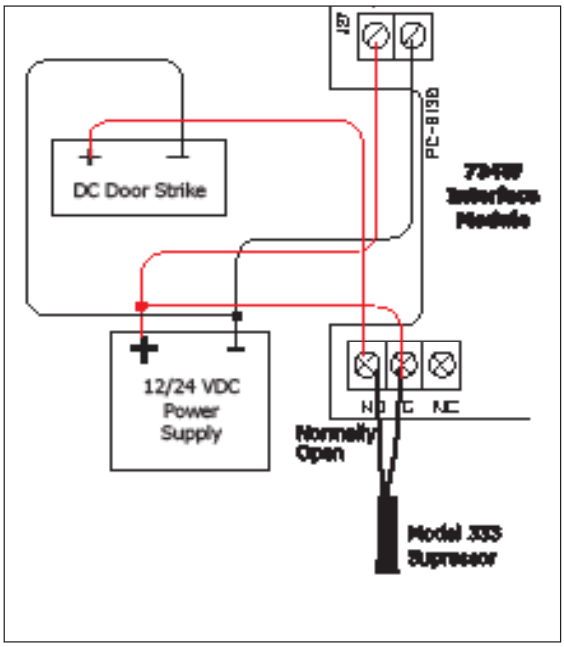

Figure 3: 734W Door Strike Wiring

12/24 VDC Power

Power to the 734W module can be provided by a Listed 12 or 24 VDC power source connected to the J27 terminal block.

NO/C/NC (Dry Contact Relay)

The 734W provides a Form C (SPDT) relay for controlling door strikes or magnetic locks. The three relay terminals marked NO C NC allow you to connect the device wiring to the relay for module control. See Figures 2 and 3 for proper door strike and magnetic lock wiring.

The Form C relay draws up to 35mA of current and its contacts are rated for 10 Amps (resistive) at 12/24 VDC. When connecting multiple locks to the Form C relay, the total current for all locks cannot exceed 10 Amps. If the total current for all locks exceeds 10 Amps, problems may arise and an isolation relay may be needed.

See the **Isolation Relay** section for information.

Install the 333 Suppressor

One Model 333 Suppressor is included with the 734W module. Install the suppressor across the 734W Common (C) and Normally Open (NO) or Normally Closed (NC) terminals.

If the device being controlled by the relay is connected to the NO and C terminals, install the suppressor on the NO and C terminals. Conversely, if the device is connected to the NC and C terminals, install the 333 Suppressor on NC and C terminals.

The suppressor wire is non-polarized. Install the suppressor as shown in Figure 4.

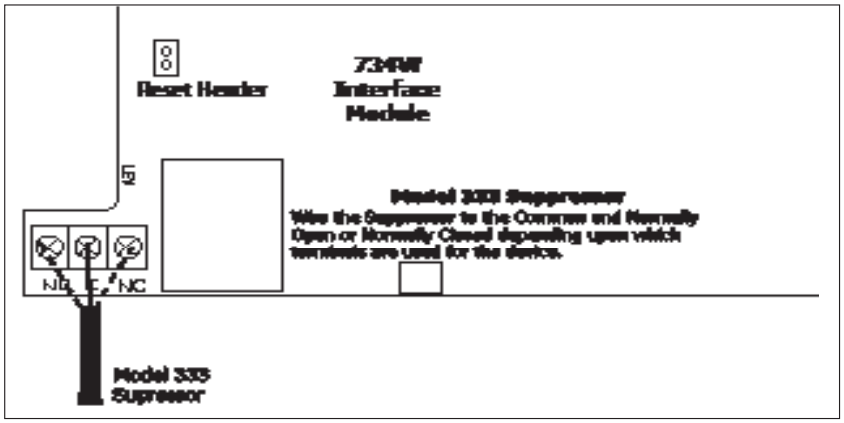

Figure 4: Model 333 Installation on the 734W Module

Isolation Relay

The Form C Relay can control a device that draws less than 10 Amps of current. If a device draws more than 10 Amp of current, or the sum of all devices controlled by the Form C Relay exceeds 10 Amps, an isolation relay must be used. Refer to Figures 5 and 6 for isolation relay wiring.

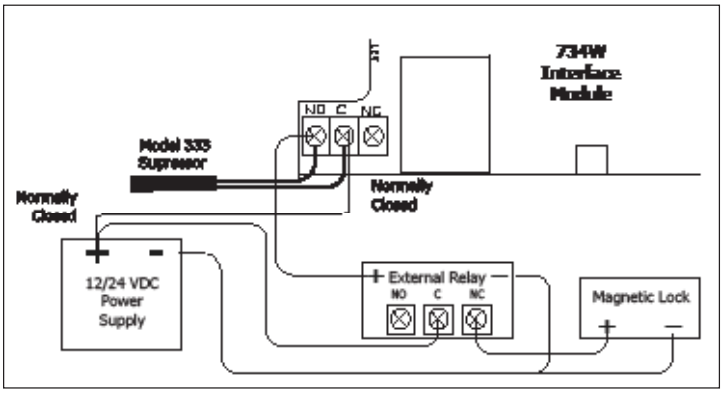

Figure 5: Isolation Relay with Magnetic Lock

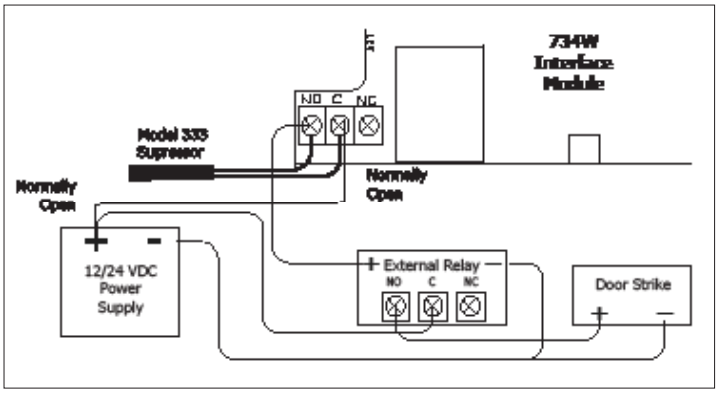

Figure 6: Isolation Relay with Door Strike

Connection to Reader

The 734W provides direct 12/24 VDC, 200mA output to the reader on the J9 Red terminal connection.

Figure 7 shows a reader with wire colors Red, White, Green, and Black. The wire colors may be different for the reader being installed. Connect the reader wires to J9 terminals 1, 2, 3, and 4. As shown in Figure 7, the Green wire carries D0, or Data Zero, and the White wire carries D1, or Data One. The Red wire carries 12/24 VDC, 200mA power limited output and the Black wire is ground.

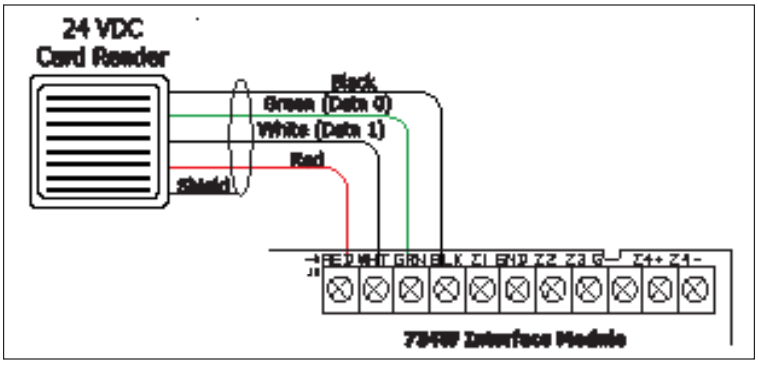

Figure 7: Card Reader Wiring

Status LEDs

The 734W provides two status LEDs. See Figure 1 for locations of the LEDs.

- The Red LED turns on for the duration of the door strike.
- The Yellow LED turns on for one second to indicate a Wiegand read.
- The Green LED is constant to indicate power.

Zone Terminals

Terminals 5-11 on J9 connect grounded zones 1 through 3. These zones have a grounded side and cannot be used for fire-initiating devices. Zones 2 and 3 can also be used for access control with Zone 2 providing a bypass option and Zone 3 providing Request to Exit functionality. Zone 4 terminals provide a non-powered Class B, Style A zone. Use the supplied, DMP Model 311 1K Ohm End-of-Line resistors on each zone. Refer to the panel programming guide for programming instructions.

Zone #	Recommended Device	Residential Fire Devices?
1	Any burglary device	No
2	Door Contact	No
3	REX (PIR or Button)	No
4	Any device	Yes

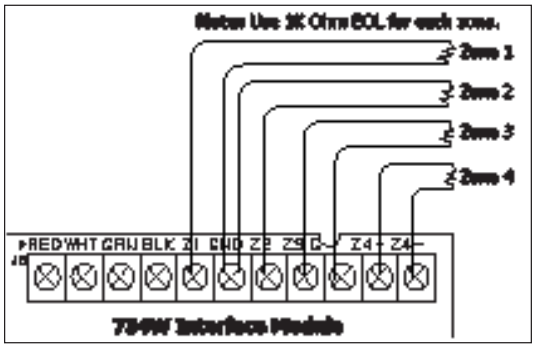

Figure 8: 734W Zone Terminals

Annunciator Header

The 4-pin J26 header located on the far right of the circuit board is used to wire the Armed Status, Remote Annunciation, and the Remote LED Control. The open collectors will supply a ground for a maximum current of 50mA @ 30 VDC. Connect a Model 300 4-wire harness to the 4-pin header for connection of the following indicators:

--AS (Armed Status)

Armed Status provides an unsupervised switched ground for a visual or audible armed status indicator that turns on when the burglary areas are armed, such as SYSTEM ON or ALL SYSTEM ON. Connect the wire from the 4-wire harness to an Armed Status output.

--RA (Remote Annunciation)

Remote Annunciation provides an unsupervised switched ground for a remote annunciator that turns on when the Model 734W on-board piezo turns on. Connect the wire from the 4-wire harness to a remote annunciator. The remote annunciator silences when the RA restores. The remote annunciator (RA) switched ground will operate even if the speaker is programmed not to operate.

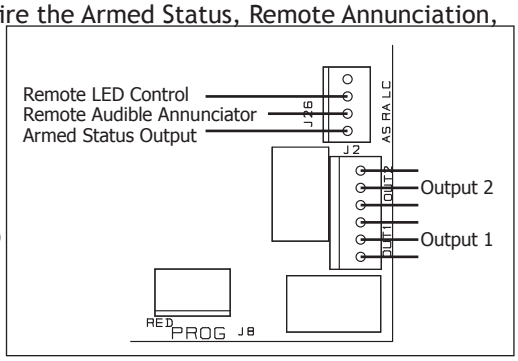

Figure 9: 734W Annunicator Outputs

--LC (Remote LED Control)

Remote LED Control provides an unsupervised switched ground for a visual indicator that turns on when the Model 734W relay activates. Connect the wire from the 4-wire harness to an LED. The LED turns on for the duration the door strike relay is on. HID readers optionally provide a connection for LED reader control.

Auxiliary Outputs 1 & 2

The 734W controls Auxiliary Outputs 1 and 2 when the Activate Zone 2 Bypass programming option is enabled and the Zone 2 Bypass Time is set. When the door contact (Zone 2) is opened while the door strike is activated, the Zone 2 Bypass Time starts. If the door has not closed at the end of the timer, Aux Output 1 is turned on and the timer starts again. If the door is still open at the end of the second timer, Aux Output 2 is turned on. Aux Outputs 1 and 2 turn off when the door contact is closed. Use the Model 431 Relay Harness for connection of Output 1 and Output 2 as shown in Table 1.

Form C Relays (J2)

Output		Color Code–Model 431 Harness
Output 2	N/O	Orange/White
Output 2	Com	White/Gray
Output 2	N/C	Violet/White
Output 1	N/O	Orange
Output 1	Com	Gray
Output 1	N/C	Violet

Table 1: Harness Wiring

Reset Header

The reset header is located just above and to the right of the WiFi network connector (see Figure 1) and is used to reset the 734W module. To reset the module when first installing the system, install the reset jumper before applying power to the module. After connecting the power, remove the reset jumper.

To reset the module while the system is operational, for example, prior to reprogramming, install the reset jumper without powering down the system. Remove the reset jumper after one or two seconds.

PROG (Programming)

The 734W module is programmable from a 32-character keypad set to address one. For **12 Volt** applications, connect the keypad to the module using a Model 330 4-wire harness.

For **24 Volt** applications, connect the keypad to the module using the included WR-0235 4-wire programming harness with in-line resistor.

Do not connect a keypad using a Model 330 harness if using a 24 volt power supply! Damage to the keypad could occur.

While programming the 734W module with a keypad, advance to the next programming option by pressing the CMD key. Return to the previous programming option or erase an incorrect entry by pressing the Back Arrow key. Make a selection by pressing the Select key below the option you wish to select. While in programming mode no 734W communication with the panel can occur.

734W
VER vvv mm/dd/yy

Version Display

When you connect the keypad to the 734W module, the version number and release date display.

- Press keys 1, 2, 3, or 4 then the CMD key to show zone status of that zone.
- Press CMD key to enter the Diagnostic Menu.
- Press 6653 (PROG) then CMD to enter the Programming Menu.

734W
ZONE: 1 -OKAY

734W DOOR
ZONE: 2 -OPEN

734W REX
ZONE: 3 -SHORT

Zone Status Display

The status of the entered zone number displays. To display another zone, enter the zone number followed by the CMD key.

MENU? NO YES

Diagnostic Menu

Select YES to display the Panel Communication Connect Status display. Select NO to return to Version Display.

CONNECT STATUS

Connect Status

To display the connection status of the 734W to the panel, select any top row key.

CONNECT STATUS
NOT CONNECTED

Not Connected: The 734W cannot connect to the panel on the WiFi network.

CONNECT STATUS
BAD PASSPHRASE

Bad Passphrase: The passphrase programmed in the 734W device does not match the passphrase programmed in the panel.

CONNECT STATUS
DEVICE NOT PROG

Device Not Programmed: The device number programmed in the 734W is not programmed as a Device Number in the panel.

CONNECT STATUS
DUPLICATE DEVICE

Duplicate Device: There is another device on the WiFi network with the same device number.

CONNECT STATUS
XMIT TIME xxx mS

Transmit Time XXX: The speed in milliseconds in which the last message was sent and received between the 734W and the panel.

734W
PROGRAMMER

Programming Menu

Press the CMD key to enter programming and display initialization options.

734W
INITIALIZATION

Initialization Options

These options can set the 734W module programming memory back to factory defaults in preparation for programming. Press any select key to enter the initialization menu.

INITIALIZATION
COMMS? NO YES

Initialization Communications

Select YES to initialize the communication options back to factory defaults. Select NO to leave communication options unchanged.

INITIALIZATION
SURE? YES NO

Initialize Confirm Option

After selecting YES to clear the Communication settings, the 734W displays SURE? YES NO for confirmation to clear the memory. This is a safeguard against accidentally erasing the programming. No memory is cleared from the programming until you answer YES to the SURE? option. Selecting NO leaves communication options unchanged.

INITIALIZATION
ACCESS? NO YES

Initialization Access

Select YES to initialize the Access Options back to factory defaults. Select NO to return to the INITIALIZATION menu.

INITIALIZATION
SURE? YES NO

Initialize Confirm Option

After selecting YES to clear the Access Options, the 734W displays SURE? YES NO for confirmation to clear the memory. This is a safeguard against accidentally erasing the programming. No memory is cleared from the programming until you answer YES to the SURE? option. Selecting NO leaves communication options unchanged.

734W
COMMUNICATION

Communication Menu

Press any select key to enter the Communication menu. Press the CMD key to advance to the Access Options menu. Press the back arrow to display the 734W Initialization menu.

734W DEVICE NO:
7

734W Device Number
Enter a device number from 2-16 for the 734W. The device number must also be programmed as a device in the panel. Default is 7.

734W
DHCP? NO **YES**

734W DHCP
Select YES (fourth select key) to use dynamic IP address information for the 734W IP Address, Subnet Mask, and Gateway Address. Select NO (third select key) to enter static IP information.

734W IP ADDRESS:
192.168.0.201

734W IP Address
Enter the IP address of the 734W. Default is 192.168.0.201.

SUBNET MASK:
255.255.255.0

Subnet Mask
Enter the local subnet mask assigned to the 734W. Default is 255.255.255.0

GATEWAY ADDRESS:
192.168.0.1

Gateway Address
Enter the local gateway address of the 734W. Default is 192.168.0.1

PANEL IP ADDR:
0.0.0.0

Panel IP Address
Enter the IP address of the panel. Default is 0.0.0.0.

Note: This IP address must match the address programmed in the panel at the Local IP Address prompt in Network Options. The DHCP programming in the panel must be set to NO.

PANEL IP PORT:
2002

Panel IP Port
Enter the port number that the 734W uses to send communication to the panel. This must be the same port that is programmed in 734W Listen Port in Network Options programming of the panel.

734W PASSPHRASE

734W Passphrase
Enter an 8 to 16-character alphanumeric Passphrase to encrypt communication with the panel. The 734W Passphrase must match the 734W Passphrase entered in Network Options programming of the panel. The Passphrase is blank by default.

Note: A passphrase is required for communication to occur with the panel.

734W
ACCESS OPTIONS

Access Options
Press any select key to enter the Access Options menu. Press the CMD key to advance to the Stop prompt. Press the back arrow to display the Communication menu.

ACTIVATE ZONE 2
BYPASS? **NO** YES

Activate Zone 2 Bypass
Select YES to activate the Zone 2 Bypass operation. Selecting NO allows standard zone operation on Zone. Default setting is NO. If the door being released by the 734W module is protected (contact installed), you can provide a programmable bypass entry/exit timer by connecting its contact wiring to the 734W module Zone 2. When the on-board Form C relay activates and the user opens the door connected to Zone 2, the zone is delayed for the number of seconds programmed in ZONE 2 BYPASS TIME allowing the user to enter/exit during an armed period.

If Zone 2 does not restore (door closed) within the programmed time, the piezo sounds every other second during the last ten seconds. If Zone 2 restores prior to the end of the programmed time, the piezo silences. If the zone does not restore before the programmed time, the 734W ends the bypass and indicates the open or short zone condition to the panel.

ZONE 2 BYPASS
TIME: 40

Zone 2 Bypass Time
Enter the number of seconds to elapse before the Bypass Timer expires. Range is from 20 to 250 seconds. Press any top row select key to enter the number of seconds. If the door remains open when the timer expires a zone open/short is sent to the panel for Zone 2. The default is 40 seconds. Figure 10 shows how the Bypass option works.

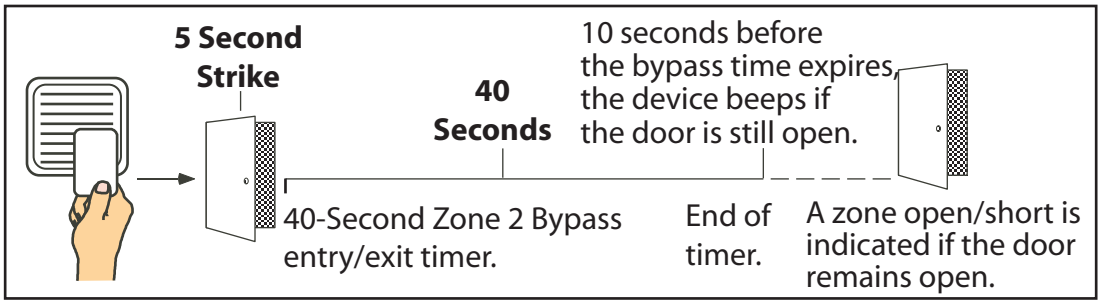

Figure 10: Zone 2 Bypass Timeline using default time

RELOCK ON ZONE 2 CHANGE? **NO** YES

Relock on Zone 2 Change?

Selecting YES turns the relay off when Zone 2 returns to normal during the bypass. Selecting NO leaves the relay on when Zone 2 faults to an open or short condition during bypass. Turning off the relay at Door Closed allows a long strike time to be automatically ended and relocks the door. The default is NO.

ACTIVATE ZONE 3 REX? **NO** YES

Activate Zone 3 Request to Exit

Selecting YES activates the Zone 3 Request to Exit (REX) option.

Selecting NO allows standard zone operation on Zone 3. Default setting is NO.

You can connect a PIR (or other motion sensing device) or a mechanical switch to Zone 3 to provide REX capability to the system.

When Zone 3 **shorts**, the on-board Form C relay activates for the programmed number of seconds (see Zone 3 REX Strike Time). During this time, the user can open the protected door to start the programmed Zone 2 Bypass entry/exit timer. After the programmed number of seconds, the relay restores the door to its locked state.

The 734W module provides a bypass-only option for REX on Zone 3. When Zone 3 OPENS from a NORMAL state, only a bypass occurs: the on-board relay does not activate. This bypass-only option uses two methods of REX. The first REX device provides the programmed bypass entry/exit timer. The second REX, or manual device such as a door knob, unlocks the door.

An example of the shunt-only configuration is a door to an office that is locked 24 hours a day. Users pass a REX motion detector positioned by the door to begin the programmed exit timer. Within the programmed number of seconds the user must then manually activate a second device, such as a REX device or manual door knob, to unlock the door. If the door is opened after the programmed number of seconds, an open condition is indicated to the panel.

ZN 3 REX STRIKE TIME: **5**

Zone 3 REX Strike Time

Enter the number of REX seconds to elapse. Range is from 5 to 250 seconds. Press any select key to enter the number of seconds. The default is 5 seconds.

ACTIVATE ONBOARD SPEAKER? **NO** YES

Activate Onboard Speaker

Select YES to enable the onboard speaker for local annunciation, such as alarm and trouble annunciations. Select NO to turn the speaker off for all operations. This does not affect remote annunciator open collector (RA) operation. The default is NO.

CARD OPTIONS: **DMP**

CARD OPTIONS: **DMP** CUSTOM ANY

Card Options

Typically, an access card contains data bits for a site code, a user code, and start/stop/ parity bits. The starting position location and code length must be determined and programmed into the 734W Module. Select **DMP** to indicate the reader sends a 26-45 bit data string. To select the DMP option, press the first Select key under DMP. Default is DMP.

Select **CUSTOM** if using a non-DMP card or user code length of 6 to 10 digits.

Select **ANY** to allow all card reads to activate the door strike relay. The door strike relay is activated for the length of time programmed in ZN 3 REX TIME. No user code information is sent to the panel.

Note: When set to DMP, the 734W converts 17 bits of the 26 to 45-bit data string into a 5-digit number.

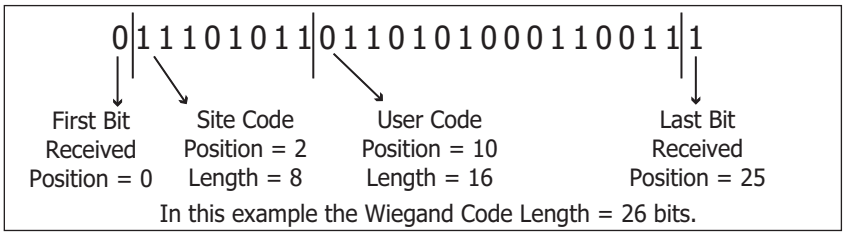

Figure 11: HID 26-bit Weigand Data Stream Bit Location

WIEGAND CODE LENGTH: **26**

Custom Card Definitions

When using a custom product, enter the total number of bits to be received in Wiegand code including parity bits.

Press any top row Select key to enter a number between 0-255 to equal the number of bits. Default is 26 bits.

SITE CODE POSITION: **1**

Site Code Position

Enter the site code start position in the data string. Press any Select Key to enter a number between 0-255. Default is 1. Press the COMMAND key to save the entry.

SITE CODE
LENGTH: **8**

Site Code Length

Enter the number of Site Code bits used. Press any Select Key to enter a number between 1-16. Default is 8. Press the COMMAND key to save the entry.

USER CODE
POSITION: **9**

User Code Position

Define the User Code start bit position. Press any Select Key to enter a number between 0-255. Default is 9. Press the COMMAND key to save the entry.

USER CODE
LENGTH: **16**

User Code Length

Define the total number of User Code bits used. Press any Select Key to enter a number between 1-255. The default is 16.

REQUIRE SITE
CODE: **NO** YES

Require Site Code

Press the top row Select key under YES to use a site code and press the COMMAND key to view the site code entry display. In addition to User Code verification, door access is only granted when any one site code programmed at the SITE CODE ENTRY option matches the site code received in the Wiegand string.

SITE CODE 1:
(1 - 65,535) 127

SITE CODE 2:
(1 - 65,535) -

SITE CODE 8:
(1 - 65,535) -

Site Code Display

You can program up to eight five-digit site codes. Site code range is 1-65535.

SITE CODE 1 displays first. Any previously programmed site code displays. Default is 127. To change the site code, press a select key, then enter the new code. Press the COMMAND key to save and to display the next site code.

Site Codes 2-8 default to blank.

NO. OF USER CODE
DIGITS: **5**

Number of User Code Digits

The 734W module recognizes user codes from one to ten digits in length. Press any top row Select key to enter a user code digit length between 1-10 digits. This number must match the user code number length being programmed in the panel. Default is 5.

All bits are read and converted into a decimal number string. The number string is left padded with '0' if needed for long user code lengths. When selecting '4' the right digit is dropped and the next four sent.

Example: # decoded	1234567
10 digits	0001234567
5 digits	34567
4 digits	3456

NO COMM WITH PNL
OFF SITE ANY ON

No Communication with Panel

This option defines the relay action when communication with the panel has not occurred for five seconds. Default is OFF. Press any top row Select key to change the default relay action.

NO COMM WITH PNL
LAST

Choose the action required when the 734W cannot establish communication with the panel:

Press the first Select key to choose **OFF** (Relay Always Off) — The relay does not turn on when any Wiegand string is received. **OFF** does not affect any REX operation. If communication is lost during a door strike, relay remains on for the door strike duration, but turns off at the end of the door strike timer.

Press the second Select key to choose **SITE** (Accept Site Code) — Door access is granted when the Wiegand site code string received matches any site code programmed at SITE CODE 1-8. For details refer back to the REQUIRE SITE CODE option.

Press the third Select key to choose **ANY** (Any Wiegand Read) — Door access is granted when **any** Wiegand string is received.

Press the fourth Select key to choose **ON** (Relay Always On) — The relay is always on.

Press the COMMAND key to display the next action.

Press the first Select key to choose **LAST** (Keep Last State) — The relay remains in the same state and does not change when communication is lost. If communication is lost during a door strike, the relay remains on for the door strike duration, but then returns to it's last state prior to doing the door strike.

734W
STOP

Stop

Press any select key to start the stop routine. When programming in complete, the Version displays and the keypad can now be removed.

FCC Information

Electronic Emission

This device complies with CFR47 Part 15 of the FCC rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Frequency Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to CFR47 Part 15. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment, not withstanding use in commercial, business and industrial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure

To comply with FCC Radio Frequency exposure requirements in section 1.1307, a minimum separation distance of 20 cm. is required between the antenna and all occupational persons, and a minimum separation distance of 20 cm. is required between the antenna and all public persons.

Antenna Installation

WARNING: It is installer's responsibility to ensure that when using the authorized antennas in the United States (or where FCC rules apply); only those antennas certified with the product are used. The use of any antenna other than those certified with the product is expressly forbidden in accordance to FCC rules CFR47 part 15.204. The installer should configure the output power level of antennas, according to country regulations and per antenna type. Professional installation is required of equipment with connectors to ensure compliance with health and safety issues.

Industry Canada Information

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna provided with the maximum permissible gain and required antenna impedance. Antenna types not included, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

This device complies with Industry Canada Licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Specifications

Primary Power	8.5 VDC to 28.5 VDC
Current Draw	
Standby	100mA + 1.6mA per active zone
Alarm	100mA + 10mA with Annunciator ON + 2mA per faulted zone
Form C Relay	35mA at 12/24 VDC
Zones	5 VDC, 2mA max
Dimensions	4.5" W x 2.75" H x 1.75" D

Compatibility

XR100/XR500 Series panels

Accessories

Proximity Readers

PP-6005B	ProxPoint® Plus Proximity Reader
MP-5365	MiniProx™ Proximity Reader
PR-5455	ProxPro® II Proximity Reader
MX-5375	MaxiProx® Proximity Reader
TL-5395	ThinLine II® Proximity Reader

Proximity Credentials

1306P	DMP Prox Patch
1306PW	Prox Patch™
1326	ProxCard II® Card
1346	ProxKey II® Access Device
1351	ProxPass®
1386	ISOProx II® Card

Listings and Approvals

FCC Part 15 ID: CCKPC0110

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