

WanderCOMM

***WPS***

***“Wander Protection System”***

*by DS Integrations Inc.*



*We mark the next generation for  
Residents and Staff in Health Care  
Security TODAY.*

wander  
COMM

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This Product has been designed for use to reduce the risk of resident wandering through remote detection.

The range, accuracy, function and performance of this Product may vary from the published specifications due to many factors, including, without limitation, site impairments from structural effects, metal objects in the vicinity, placement of the receiver and transmitter, interference from other electrical devices, atmospheric effects, installation, and maintenance. Other factors may also affect performance of this Product.

DSI does not guarantee that this Product will detect 100% of resident wanderings. DSI does not guarantee that this Product will not return false reports of resident wandering. Weekly testing of this Product, as described in the Product documentation, is essential to verify the system is operating correctly and to ensure that the probability of detecting an alarm and/or locating the transmitter is maximized.

The failure to undertake regular testing will increase the risk of system failure and failure to detect resident wandering. The failure to undertake regular testing will increase the risk of false reports of resident wandering.

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## Section

# 1.0

## Introduction

This manual provides instructions to install, configure, and test the Wander Protection System. For operating instructions, please see the Wander Protection System End-User Guide.

The Wander Protection System is configurable to meet the specific needs of the facility. Some common system configurations and applications are covered in this manual, as are the installation instructions on some of the more common accessories. This information is meant to provide a system overview. Please see the appropriate installation manual or sheet for detailed procedures.

**Note:** *The information contained in this manual is intended for the trained installer. The installer should be familiar with wiring in commercial and industrial enterprises; micro electronics, including static sensitive components; and radio frequency devices. Local wiring and building codes must be followed. If you do not have these skills, do not attempt to install the system.*

## **1.1 Overview of the Wander Protection System**

The WPS integrates the nurse call system, the staff emergency system, and the wander protection system through automatic door locking all into one seamless union. All facility security functions previously delegated to separate systems are incorporated into the main control system through the Spider Alert software, whereby all activity is logged in a fully customizable fashion.

The Wander Monitor Transmitter (WMT) includes both a nurse call system and a proximity detector. The proximity detector will be utilized in conjunction with a loop generator (WML) and a series of loops to be installed on doors and the perimeter of the grounds. When a WMT wearer approaches a loop, the bracelet's proximity detector is triggered and the WMT emits an RF signal which is recognized by our central controller (WMC). Based on the profile of the individual WMT (up to 57,600 different profile combinations may be programmed into each bracelet at each facility) the controller may lock the door for a wander prone resident while allowing access for a residential patient or staff member.

WanderComm is unique in that it provides a reset capability. The alarm states are reset when the nurse attends the resident and passes a magnet over the bracelet. This serves two purposes: first, it clears the alarm, ensuring that multiple staff do not try to attend to a single event; and second, it meets the new (2003) alarm response audit trail requirement for accreditation by JCAHO (Joint Commission on Accreditation of Healthcare Organizations).



## **1.2 Terminology**

- WPS - Wander Protection System
- WMT - Wander Monitor Transmitter (Personality Bracelet)
- WML - Wander Monitor Loop (The electromagnetic loop provider)
- WMC - Wander Monitor Door Controller
- SR500/520 - Visonic's RF-based receiver, connects to WMC
- Spider Alert - Visonic's computer-based alarm-receiving head
- DSI - DS Integrations



# 2.0

## Installation of the WML

This manual provides instructions to install, configure, and test the Wander Monitor Loop. For operating instructions, please see the Wander Protection System End-User Guide.

The Wander Protection System is configurable to meet the specific needs of the facility. Some common system configurations and applications are covered in this manual, as are the installation instructions on some of the more common accessories. This information is meant to provide a system overview. Please see the appropriate installation manual or sheet for detailed procedures.

*Note: The WML has been tested and found to be in compliance with FCC Part 15, Subpart B (2000) & ICES-003 for both conducted and radiated emissions. Changes or modifications not expressly approved by DSI could void the user's authority to operate the equipment.*

## 2.1

## WML General Description

The Wander Monitor Loop (WML) is the triggering mechanism of the Wander Protection System. It is the device that powers up the electromagnetic loops that trigger the WMT to transmit back to the WMC, and thereby to Spider Alert depending on what personality the WMT has been set to.

## 2.2

## Generator Location

Install indoors only, near an electrical outlet, and close to your anticipated ground connection. Don't mount the transmitter near any large metal objects, such as breaker boxes, water heaters, metal garage door tracks, or washer and dryer. The WML can be mounted anywhere, as long as you are able to run a continuous wire to the desired protected area and the above conditions are met. Secure the transmitter to a mounting surface using the appropriate mounting hardware.

## 2.3

## Terminal Wiring

Connect the trigger wire(s) to the trigger loop terminals in a series circuit configuration only. The wire must be ONE complete conductive loop. (See Section 5.3 for loop examples) Connect earth ground using a length of wire to the black terminal. Connect loop trouble monitor wire to the Trouble Loop terminals back to a normally closed monitoring point. Adjust range control knob to desired strength. Plug in the AC adaptor into a U.P.S. backed-up outlet and into the power jack on the transmitter. The Power Indicator and Loop Connection Indicator lights should glow.





## **2.4**

## **Installation of loop wire**

Do not run wire in the same conduit as electrical wires, telephone wires, or television cables. If you must run the wires parallel to electrical wires, telephone wires, or television cables keep the wires at least 3" apart. If you must cross wires, do so at 90 degree angles. Install the wire around your proposed trigger points. Connect it to the transmitter and turn the system on. Then, test the WMT on the trigger wire to ensure it is working properly. As for length, unless you plan on running more than 1000 meters of wire, there shouldn't be any worry of output power.

It is recommended that **Category 5 or better eight conductor cable** be used for the WML loop. The twist in the wire is a natural electromagnetic field canceller, so as you run the length of wire to the location to be protected, keep the wire twist intact. When you approach the area needing protection, untwist the wire or splice on some untwisted FT-4 to make the electromagnetic loop. See section 5.3 in the appendix at the back of this manual for loop dimensions, installation applications, and wiring applications.

## **2.5**

## **Splicing wire**

Note the location of all splices and file it with your manual to keep for future reference. Most wire breaks occur near or at the splices. If your splice or connection pulls loose, your entire system will fail. Make sure of a secure connection.

## **2.6**

## **Burying the wire**

Cut a trench 1 to 3 inches deep along your previously planned boundary. Burying the wire is recommended to prevent damage to the wire or transmitter and to avoid possible injuries to persons tripping over the exposed wire. Be sure to maintain some slack. The wire will expand and contract with temperature variations. Be sure to use cable approved for direct burial.

## Section



## 3.0

# Installation of the WMC

This manual provides instructions to install, configure, and test the Wander Monitor Controller. For operating instructions, please see the Wander Protection System End-User Guide.

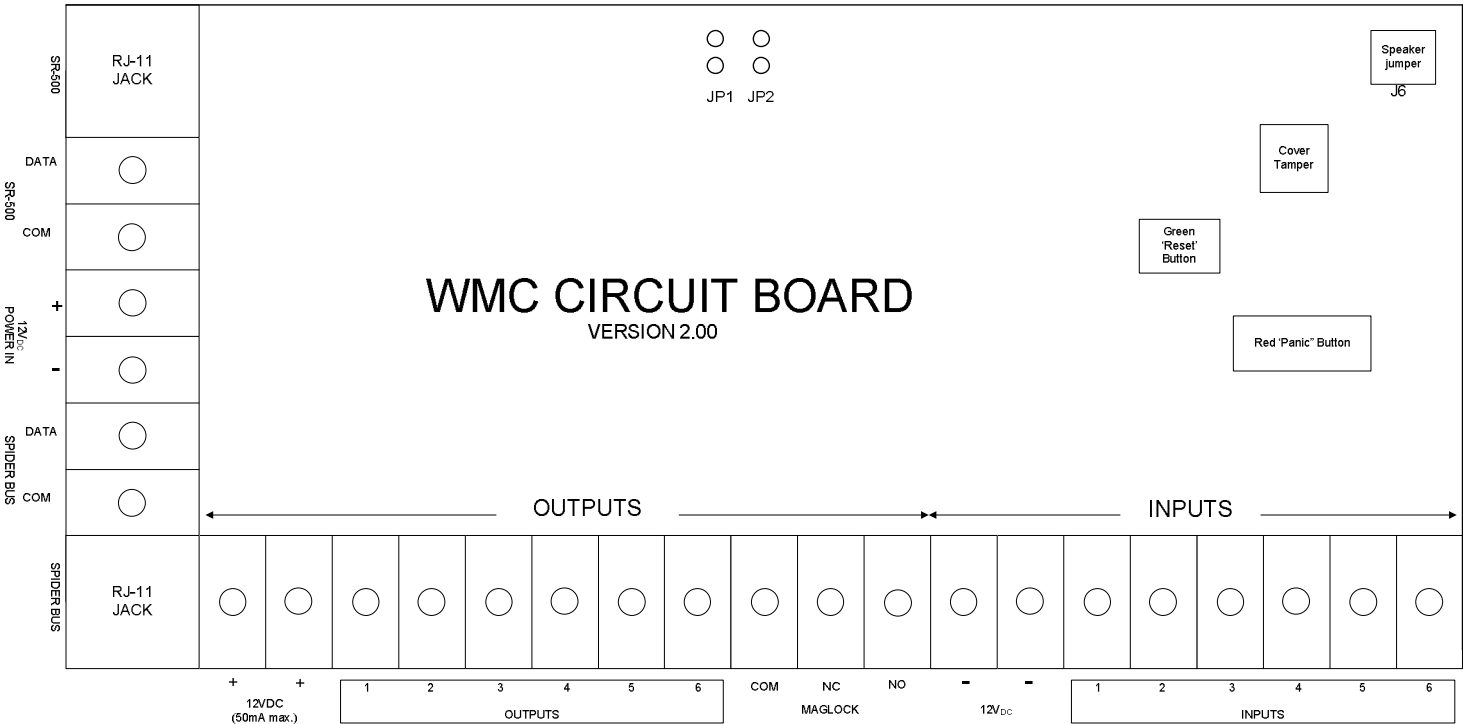
The Wander Protection System is configurable to meet the specific needs of the facility. Some common system configurations and applications are covered in this manual, as are the installation instructions on some of the more common accessories. This information is meant to provide a system overview. Please see the appropriate installation manual or sheet for detailed procedures.

*Note: The WML has been tested and found to be in compliance with FCC Part 15, Subpart B (2000)& ICES-003 for both conducted and radiated emissions. Changes or modifications not expressly approved by DSI could void the user's authority to operate the equipment.*

3.1

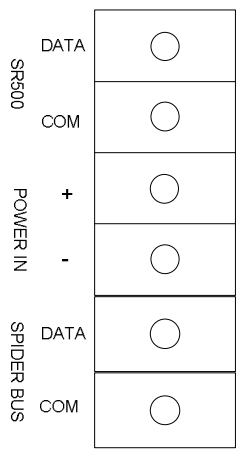
WMC General Description

The WMC Door Controller is an integral part of the Wander Monitor system. The WMC acts as the intelligent link between the WMTs and the Spider Alert system, facilitating the transition from controller based security used to restrict patient movement and generate alarms. In this new standard, the personality bracelet acts as the controller to enhance patient care and improve staff efficiency. The WMC comes pre-programmed to respond appropriately to the various personality profiles available in the WMT personality bracelets. The settings described on the following pages may be used to customize the WMCs response based on your environment, patient mix, and requirements. To ensure compatibility and ease of implementation, the WMC looks and acts like a standard SR-500 to the Spider Alert computer. The WMC will send event codes from a personality bracelet, or any other Spider Alert-compatible device utilizing standard Spider bus protocol. The WMC also responds to command codes received by the attached SR-500 from other Spider Alert RF devices.



3.2

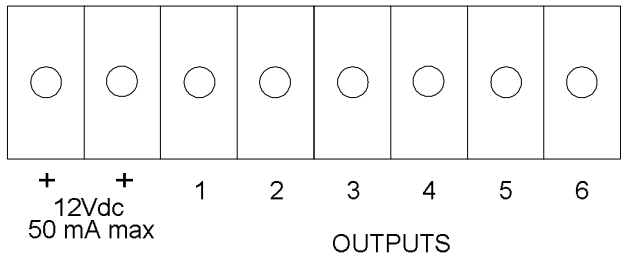
Installation



To provide power for the WMC, keeping polarity correct, connect either an external 12V<sub>dc</sub> power supply or the 12V<sub>dc</sub> Spider bus power to the ‘POWER IN +’ and ‘POWER IN -’ terminals on the left-hand side of the circuit board. Connect ‘Data’ and ‘Com’ from the receiver, either the SR-500 or a WR-200, to the ‘SR500 DATA’ and ‘SR500 COM’ WMC terminals. The remaining connections, ‘SPIDER BUS DATA’ and ‘SPIDER BUS COM’ are for connecting to the Spider Alert head end ‘DATA’ and ‘COM’, if Spider Alert is being used.

3.3

Output Circuits



The WMC provides six output terminals plus two 12V<sub>dc</sub>, 50mA max terminals. The two 12V<sub>dc</sub> are in common with the outputs and can be used to power auxiliary items requiring less than 50mA.

The output circuits, which are of the open-collector type, are under control of the WMC firmware, and they are activated (pulled low), automatically by WMC firmware commands. Each output may be used to sound an alarm by interfacing to a remote security-monitoring system, to control devices, to open a door controlled by an electrical door strike, or for many other tasks. Since each output cannot sink more than 100 milli-amp, an interface relay may be required for controlling external devices.

The outputs are used as follows:

- Output 1
- ALARM TRIGGER 1 - Activated upon detection of a Level 1 or 2 WMT only if the door status input is open. Alarm Message 2 will sound every 5 seconds until reset.
- Output 2
- ALARM TRIGGER 2 - Activated when a WMT Trigger 2 signal is received for outdoor loop detection in home care applications.

- Output 3      WMT PANIC ALARM - This output is activated when the WMC receives a panic alarm (button press) from a WMT.
- Output 4      WMT LOW BATTERY - Activated when a WMT low battery signal is received.
- Output 5      WMT TAMPER - Activated when a WMT tamper signal is received.
- Output 6      OPEN DOOR - Auto door unlock control. This output is activated only when GRP 1 or 2 condition is present and a WMT level 1 and/or 2 is at the door. When dipswitch 3 is off (Individual bypass mode), this output will pulse only if Spider Alert grants authorization.

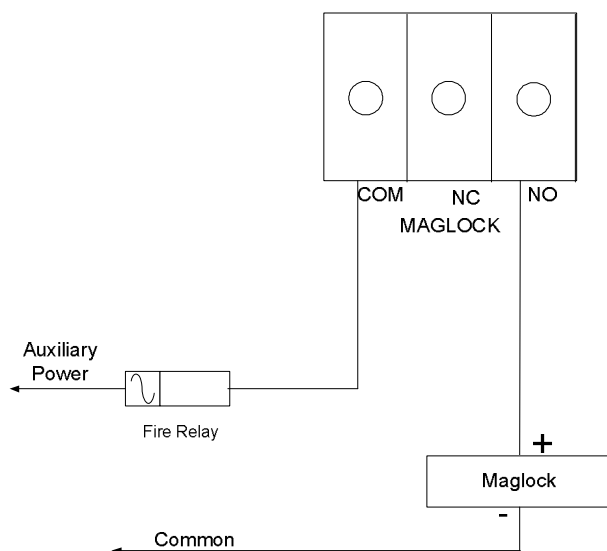
### 3.4

### Maglock Form C Relay

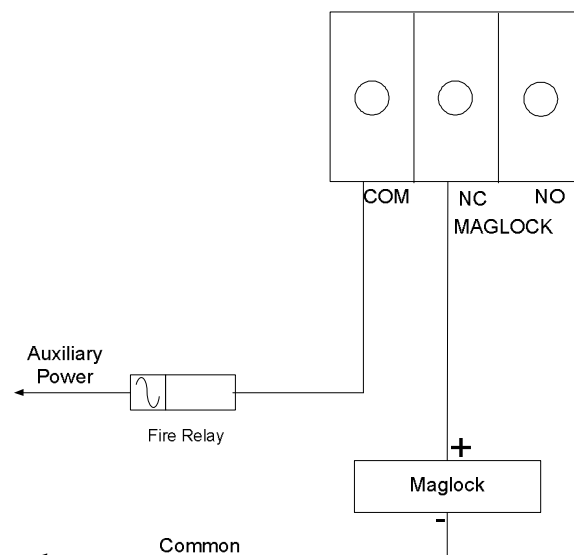
This relay is rated at 2A, 30V<sub>dc</sub>. The door lock operates for 10 seconds when the WMC receives a transmission from a Level 1 or 2 WMT within the WML field. If a Level 1 or 2 WMT stays within the field, the 10-second timer will be refreshed each time a transmission is received: this will keep the door in a locked status until the WMT moves away from the door. If a Level 3 (staff) WMT is within the WML field the door lock operation will be suspended for 15 or 30 seconds, depending on the setting of dipswitch 5. Other dipswitches also affect the operation of this relay. Please review section 3.7 to confirm the dipswitches are set correctly for your facility.

**(DISCLAIMER: IF BUILDING CODES REQUIRE A 15 TO 20 SECOND RELEASE ON THE LOCKING DEVICE, IT IS THE RESPONSIBILITY OF THE INSTALLING COMPANY TO INSTALL THE APPROPRIATE LOCKING HARDWARE TO MEET THIS CODE)**

Door locks when Level 1 or 2 WMT approaches.

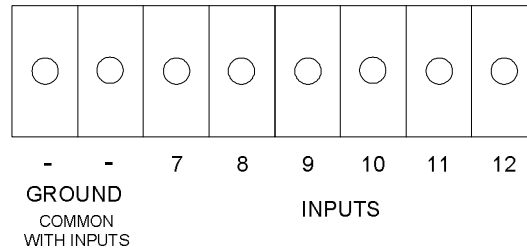


Door unlocks when Level 1 or 2 WMT approaches.



## 3.5

## INPUTS

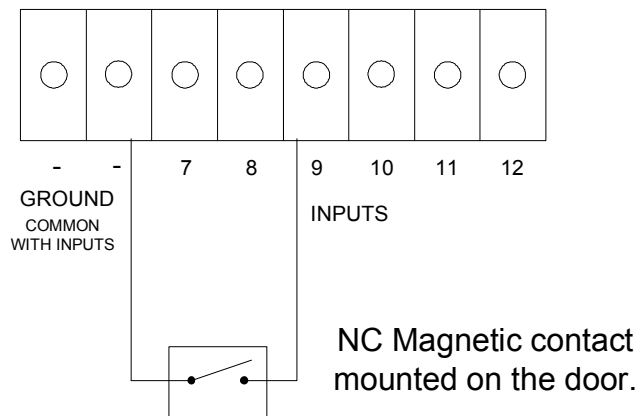


The WMC has six input terminals plus two open collector reference ground point terminals. The input terminals are of an open-collector active low type and are used to report events to the WMC firmware for decision making.

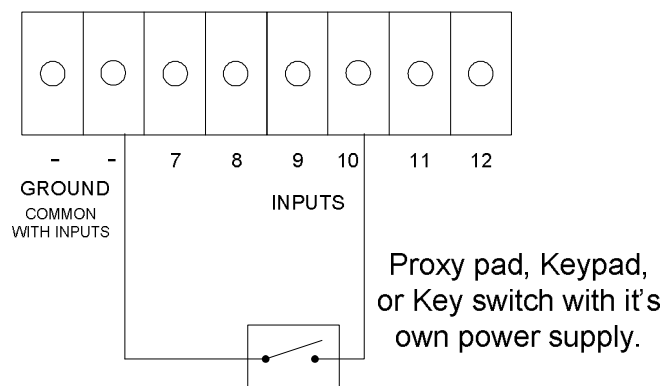
**Input 7**      **ENVIRONMENT 1** - This input informs the WMC of level 1 environmental conditions. When level 1 environmental conditions are met. (eg. Correct outside temperature) the WMC allows door bypass for level 1 WMTs.

**Input 8**      **ENVIRONMENT 2** - This input informs the WMC of level 2 environmental conditions. When level 2 environmental conditions are met. (eg. Correct outside temperature) the WMC allows door bypass for level 2 WMTs.

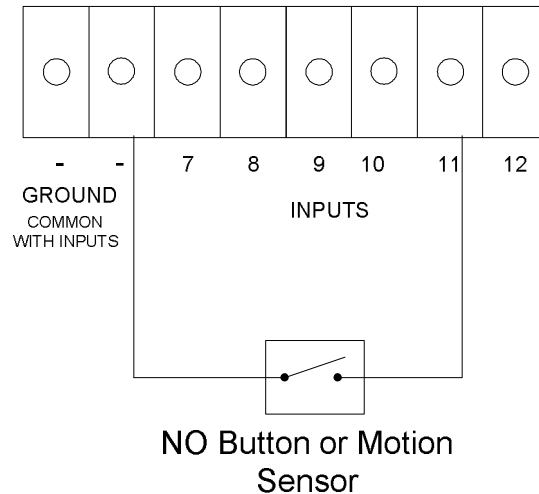
**Input 9**      **DOOR STATUS** - Informs the WMC of the door open/close status.



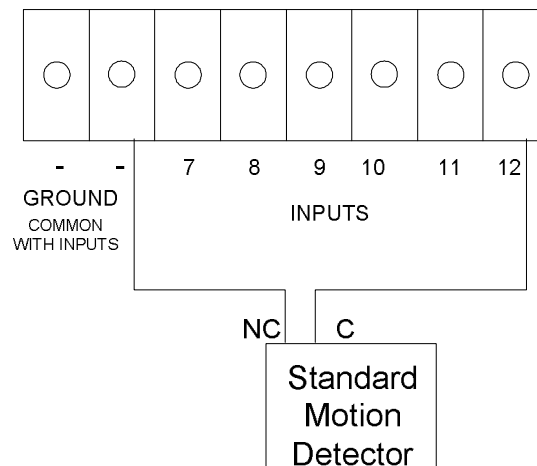
**Input 10**      **RESET/BYPASS** - Remote reset/bypass, with time delay set with dipswitch 5.



- Input 11 REQUEST TO ENTER - Accepts a signal from an access button or motion sensor on the outside of the door to allow entry when the door is locked from the inside. When this input is pulled low the WMC opens the Form C relay for the maglock. Message 1 and 2 will still sound if a WMT is in the field. The door is unlocked for the time set by dipswitch 5.



- Input 12 PIR - Active mode trigger; this input is normally used when WMCs are installed within close proximity of one another. A motion detector can be used to activate this input. If this input is closed, the WMC does not transmit alarms received from the WMTs. An opening of the loop causes the WMC to respond to transmissions from the WMTs, and will continue to do so for 2 minutes. Each activation of this input will reset the response time.



### 3.6

### LEDs

The WMC's red LED flashes while it is engaged in message transfer with either the Spider Alert head end or the receiver and until an acknowledgement is received. The green LED illuminates to indicate the WMC has power. The green LED will turn yellow and flash until the SR500 or Spider bus is connected when dipswitch 4 is on (ie. The WMC is in Spider Mode). The green LED will turn solid yellow for 3 seconds when the WMC hears any of the WMT signals with low battery and/or tamper. If the red LED is on continuously there is trouble communicating with the Spider Alert head end.

### 3.7

### Tamper event reporting

A normally closed tamper switch protects the WMC against tampering. Once the cover is removed, the unit will automatically send the SR500's ID and a tamper alert to the Spider Alert head end computer.

### 3.8

### Speaker, Microphone, and Messages

The WMC has a built-in speaker and on-board microphone for recording personalized alarm messages. There are eight prerecorded default messages:

- MESSAGE 1 - "chime" "Please Stand Back From the Door" (Every 5 seconds)
- MESSAGE 2 - fast "chime, chime" "Door Alarm" (Every 3 seconds)
- MESSAGE 3 - "chime" "Please Stand By" (Once)
- MESSAGE 4 - "chime" "Access Granted" (Once)
- MESSAGE 5 - "chime" "Access Denied" (Once)
- MESSAGE 6 - "chime" "Door Bypass" (Every 10 seconds while staff bracelet is in field.) (Red light blinks in bypass mode.)
- MESSAGE 7 - "chime" "Transmitter Low Battery" (Every 5 seconds while bracelet is in field.)
- MESSAGE 8 - "Panic Alarm" Once, when red button on WMC is pressed.

To program custom messages:

First short jumper JP1 on the WMC circuit board. The green light will blink once every second. By pressing the green button you can escalate to the next message. When you have reached the message you wish to custom record, hold in the RED button for 3 seconds. When the green light starts to blink, start recording by speaking into the microphone located on the upper right corner of the circuit board. release the red button when the you are finished recording. While the system is still in record mode, play back the recorded message by pressing the red button once quickly. To program or play the next message, press the green button once to move forward. Take jumper JP1 off when complete. The green LED will stop blinking. To reset the messages back to the preprogrammed default, while jumper JP1 is shorted, hold the tamper switch and the red button in at the same time for 3 seconds.

To change the volume level of the messages, use a small blade screw driver and adjust the screw located on the upper right corner of the circuit board. Turning the screw clockwise reduces the volume.



## 3.9

Dip Switch Settings

The figure directly below outlines the dip switch settings needed for the different operation modes of the WMC. The dipswitches are located on the center of the WMC circuit board. You will need to refer to this chart for the proper setting of the dip switches so that the WMC and WMT's will interact in the desired manner for the facility.

Dip Switch Setting (Black Setting Default)					
		OFF		ON	
1. After alarm - Locked		<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	1. After alarm - Unlocked
2. Green Button + staff = reset		<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	2. Staff WMT = reset
3. Individual Bypass mode		<input type="checkbox"/>	3	<input checked="" type="checkbox"/>	3. Group bypass mode
4. WMC Stand Alone mode		<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	4. Spider Mode On
5. NFPA/bypass time = 30s		<input checked="" type="checkbox"/>	5	<input type="checkbox"/>	5. NFPA/Reset = 15s
6. WR200 mode		<input checked="" type="checkbox"/>	6	<input type="checkbox"/>	6. Environment 2 on
7. NFPA nuisance off		<input checked="" type="checkbox"/>	7	<input type="checkbox"/>	7. NFPA nuisance on
8. Active mode (time = 120s)		<input checked="" type="checkbox"/>	8	<input type="checkbox"/>	8. NFPA Unlock feature

## Dipswitch 1

- OFF - Will activate the form C relay to lock the door when the WMC senses a WMT Level 1 and/or Level 2 while in alarm condition. This option will help prevent other patients from leaving a protected area in the event a wandering patient escapes.
- ON - Will deactivate the form C relay so the door cannot lock while the WMC is in alarm condition. This option will help to prevent the door from locking staff out while trying to escort a patient back into the facility.

## Dipswitch 2

- OFF - In this mode a level 3 WMT has to be present before the Green Button will activate a reset or bypass. This mode is recommended to prevent accidental bypassing from staff directly above the door in multilevel facilities
- ON - The green button will reset alarms if pressed. Note: If the button is held in to fool the system the door will not unlock: an alarm has to be present before it will function as a reset. When in this mode, the WMT Level 3 staff bracelet will bypass and/or reset the WMC.

## Dipswitch 3

- ON - Note this setting works either in Stand-alone or Spider Alert mode.
  - Input 7 - ENVIRONMENT 1 will allow Level 1 to exit without alarm.
  - Input 8 - ENVIRONMENT 2 will allow Level 2 to exit without alarm.
  - Input 7 & 8 will allow both Levels 1 and 2 to exit without alarm.

This individual program method will allow for situations where a Level 1 bracelet can have access and not Level 2 and vice versa.

- With either of input 7 or 8 present, the WMC will also pulse output 6 for 3 seconds when an authorized bracelet stays within the field for more than 5 seconds.
- Message 4, “access granted” will also sound upon an authorized WMT entering the field.

If dipswitch 3 is on, Spider Alert can activate input 7 and/or input 8 remotely through the SR500's output 1 and/or 2. The WMC will recognize this as a signal from Spider Alert to turn on the ENV1 and/or ENV2 mode on the WMC. This could be done according to a time schedule in the Spider Alert database for that door. This would give the time of day exemption for Level 1 or 2 bracelets to have access to leave out particular doors. Temperature monitors could be set to activate an input to Spider Alert at another point on the Spider bus, and if the input falls within a predetermined time schedule, Spider Alert could then activate SR500 outputs 1 and/or 2 on any predetermined SR500s at the doors requiring this environmental feature. Note: with dipswitch 4 on, Spider Alert mode would take priority over inputs 7 and 8.

- OFF - Note this setting only works with the Spider Alert head end. When the WMT Level 1 or 2 comes to the door, the WMC will receive the triggered signal sent from the WMT, sound message 3 (please stand by), and send the WMT ID and door status to the Spider Alert head end with the door ID.
  - Spider Alert will then check to see if this code is approved to exit,
  - If the code is appropriate, the Spider Alert head end will pulse SR500 output 1 (ENV1), and the bracelet will have time according to the setting of dipswitch 5 to pass through the door without triggering an alarm.
  - The WMC will also pulse the auto door opener output for 3 seconds.
  - If the WMC sees a pulse to the SR500 output 1 within 5 seconds, message 4, “access granted” will sound,
  - If the WMC does not get a reply from Spider Alert within 10 seconds, message 5, “access denied” will sound.

#### Dipswitch 4

- OFF - The WMC is in stand-alone operation. There will not be any transmissions to the Spider Alert head end, if connected. The facility must ensure audible messages from the WMC can be heard and acted on by the staff. The red button, when pressed, acts as a help/panic button for staff causing message 8 to sound.
- ON - The WMC is in Spider Alert mode. Transmissions will be sent via the Spider Bus to the Spider Alert head end. The WMC acts like a SR500 and the Spider Alert software can respond according to how it is set up. The red button acts as a help/panic button for staff. When the button is pressed, message 8 will sound and a signal will be sent to the Spider Alert head end with the door ID requesting assistance.

#### Dipswitch 5

This dipswitch sets the time for NFPA and reset/bypass. Under NFPA this time is the period until the door lock releases. The reset/bypass time is the time period the door remains unlocked under reset or bypass conditions.

- OFF - 30 seconds
- ON - 15 seconds

**Dipswitch 6**

This dipswitch determines the status of Input 8, is it being used for ENVIRONMENT 2 input or a WR200 input.

- OFF - WR200 mode, toggling the input mimics the operation of BEEP signal for wanderer, door locks, Message 1 is played. Note: the identity of the WMT at the door is not transmitted.
- ON - ENVIRONMENT 2 input functions as above under dipswitch 3 explanation.

**Dipswitch 7**

This dipswitch controls the NFPA 3 second nuisance delay. Input 8 hold in for 3 seconds or (RED button hold in for 3 seconds if programmed), upon and during the 3 seconds the panic alarm message will sound twice. If not held in for 3 seconds the door will not be unlocked and will function as normal. If the 3 second duration has expired, the alarm output will activate and the alarm message will sound until reset. The door will unlock in 12 or 27 seconds, depending on the setting of dipswitch 5.

- OFF - No nuisance delay, pressing the NFPA button will immediately unlock the door.
- ON - 3 second nuisance delay activated.

**Dipswitch 8**

- OFF - Active mode motion sensor is using input 12, with a preset time of 120 seconds.
- ON - NFPA 15/30 second unlock feature; in this mode the door is normally locked. Momentary activation of input 8 or RED button pressed will unlock door in 15 or 30 seconds, depending on setting of dipswitch 5. Output 1 will activate and door alarm message will sound until WMC is reset. If dipswitch 7 is in the ON position, then input 8 or the RED button will have to be active for at least 3 seconds (message 'panic, panic' is sounded as a deterrent) before the unlock procedure is activated in 12/27 seconds. If the WMT hears a "BEEP signal" from a wanderer the NFPA feature will be ignored until the wanderer leaves the vicinity of the door loop. When wanderer is continually standing at door the "stand back" message and other features operate as before.

## **3.10 Reporting modes and levels of operation**

The WMC reports all standard wireless transmissions transparently through the SR-500 to the Spider Alert head end. Some of the WMT personality bracelet's codes are treated in a different manner: they are looked at by the WMC from three different levels. Door-triggered transmissions from the WMTs are responded to by the WMC on a local level only. These signals will not be sent to Spider Alert unless the door input status on the WMC is open.

### **3.10.1 Level 1 - Wanderer**

#### **DOOR CLOSED:**

- Once this signal is received, the WMC activates the Form-C relay to lock the door for 10 seconds and relock it until the WMT leaves the vicinity of door.

- Message 1 (please stand back from the door) will sound across the speaker every 5 seconds until Level 1 leaves the vicinity of the door.

DOOR OPEN:

- Message 2 (door alarm) will sound and repeat every 3 seconds.
- ALARM TRIG. 1 output will change state.
- Form C relay will activate.
- If the WMC is in Spider Alert Mode (dip 4 on), a message will be sent to the Spider Alert with the WMC/SR500 door location ID included in the message. Spider Alert will handle that alarm and location according to its programming instructions. Spider Alert will know the code is a level 1 and that bracelet has possibly left through that door ID.
- These above four conditions will exist until a valid reset is entered. If the WMC is in Spider Alert mode, a reset signal will be sent to the Spider Alert head end with the door location ID.

### **3.10.2 Level 2 - Resident**

This level functions the same as Level 1 unless Environmental modes are activated. This feature would be used in a care home if there were a mixture of Level 1 and Level 2 patients sharing the same facility. Management may dictate that Level 1 and 2 bracelets can only access the courtyard doors if certain weather conditions and time restraints are met. This access can be automatic without staff intervention. Management may also dictate that Level 2 bracelets worn by residents may have access to the front public entrance when these same conditions are met but Level 1 bracelets will not have access.

### **3.10.3 Level 3 - Staff**

When this bracelet enters into the field-detection loop at a WMC door, the WMC will automatically sense that staff is in the vicinity and the WMC if in alarm will reset and bypass for 10 seconds (if dip 2 ON). If the staff stays within the field of the WMC, the WMC will stay in bypass mode until the staff bracelet leaves the vicinity. The bypass message will sound every 10 seconds. The WMC will send a reset signal to the Spider Alert head end to log which staff reset the door.



# 4.0

## Installation of the WMT

This manual provides instructions to install, configure, and test the Wander Monitor Transmitter. For operating instructions, please see the Wander Protection System End-User Guide.

The Wander Protection System is configurable to meet the specific needs of the facility. Some common system configurations and applications are covered in this manual, as are the installation instructions on some of the more common accessories. This information is meant to provide a system overview. Please see the appropriate installation manual or sheet for detailed procedures.

*The WMT-001 complies with Part 15 of the FCC Rules and RSS-210 of Industry Canada. 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.*

**NOTE:** *This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and RSS-210 of Industry Canada. . These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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. However, 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 not expressly approved by DSI could void the user's authority to operate the equipment.*

## **4.1**

## **WMT General Description**

The WMT, a device worn around the wrist, uniquely identifies the wearer electronically, hence the term “personality bracelet”. There are three different customizable level settings that the WMT can emulate. As the WMT approaches a protected perimeter, be it a door or a courtyard, the WMT senses the electromagnetic field from the WML and transmits through RF to the WMC. The WMC then decides what action to take, depending on what personality the WMT has been programmed to emulate. The WMT also has a programmable help or panic button on it.

## **4.2**

## **Programming Area Description**

(The yellow highlighted choices are the default settings that you receive from the factory.)

### **Area 1 - Trigger 1**

If enabled, Trigger 1 is the main field that triggers the WMT. When the WMT comes within radius of this field, the WMT will retransmit every 4 seconds. When the door controller hears this signal, the door will lock.

1. OFF
2. **WANDERER** (Level 1) - When a WMT is detected by the WMC, the door will lock for 10 seconds, and a voice message will repeat 2 times during lock condition saying “please stand back from the door”. If ENV-1 is present, the door will not lock, but after the WMC senses the WMT in the field for 5 seconds, a message will encourage the person to exit, and an output will be activated to trigger an automatic door opener if used.
3. RESIDENT (Level 2) - Functions the same as 2 unless ENV-2 is present on the WMC.
4. STAFF (Level 3) - Staff presence will simulate a reset/bypass at the door controller, allowing Resident and Alzheimer bracelets to pass through without setting off an alarm at the door controller. This feature will allow staff to escort patients through monitored doors without tripping off the alarms.

### **Area 2 - Trigger 2**

If enabled, Trigger 2 will activate the bracelet in an outdoor area with the invisible loop buried in the ground.

1. OFF
2. **ONCE** - Sends signal out only once.
3. REPEAT- Once activated, the delay between repeat alarms is set in Programming Area 6. Programming Area 7 defines how many times the alarm will repeat before stopping, unless reset. Programming Area 8, continuous, will override the number of cycles and will force the transmitter to continue to transmit according to the time-delay interval set in Programming Area 6 until reset.
4. STAFF - This does not transmit any signal to Spider Alert.

### **Area 3 - Panic**

If enabled, a panic/help signal is activated when the button is pushed on the WMT. Typically this feature is used for wireless nurse call and wireless staff help. The repeat feature allows for possible tracking of the WMT once activated. The Escalate allows for other alarm actions or notification to other response people if WMT is not reset.

1. OFF
2. **ONCE** - Sends signal out only once.

3. REPEAT- Once activated, the delay between repeat alarms is set in Programming Area 6. Programming Area 7 defines how many times the alarm will repeat before stopping, unless reset. Programming Area 8, continuous, will override the number of cycles and will force the transmitter to continue to transmit according to the time delay interval set in programming area 6 until reset.
4. ESCALATE- There are three panic-alarm levels. The initial alarm (Level 1), Escalation (Level 2), and no-response (Level 3). The delay between each panic-alarm transmission is defined under Programming Area 6 and the amount of times each panic level transmits before it escalates to the next level is determined by Programming Area 7. After Level 3 is completed, the transmitter automatically stops transmitting. Programming Area 8 can be set to allow for continuous rotation of Level 1, 2, 3, re-transmissions. Resetting the WMT with a magnet will stop all processes at any time.

#### **Area 4 – Tamper**

If enabled, once the strap is disconnected, the WMT will transmit the bracelet-removal alarm signal. The WMT will send a restore signal once the strap is reconnected for 30 seconds. If set for Repeat, the WMT will re-transmit the same as Programming Area 2 and 3.

1. OFF
2. ONCE - Sends signal out only once
5. REPEAT- Once activated, the delay between repeat alarms is set in Programming Area 6. Programming Area 7 defines how many times the alarm will repeat before stopping, unless reset. Programming Area 8, continuous, will override the number of cycles and will force the transmitter to continue to transmit according to the time delay interval set in programming area 6 until reset.

#### **Area 5 – Supervisory**

If enabled, the WMT will send out a supervisory status signal every hour. If Low Battery is selected, only a Low Battery signal will be sent when the battery falls below an unsafe threshold.

1. OFF
2. Low Battery
3. ON (Note: will reduce battery life.)

#### **Area 6 - Time**

Time is the interval between auto alarm (repeat, escalation) transmissions.

- |           |            |
|-----------|------------|
| 1. 30 sec | 4. 5 min.  |
| 2. 1 min. | 5. 10 min. |
| 3. 2 min. |            |

#### **Area 7 – Cycle**

(REPEAT)- Cycle defines the amount of times each alarm signal is transmitted or repeated before automatically stopping. (ESCALATION)- Cycle defines how many times each of the alarms in each of the levels transmits before escalating to the next level. Programming Area 6 sets the interval between each individual alarm transmission.

- |             |             |
|-------------|-------------|
| 1. 2 cycles | 4. 5 cycles |
| 2. 3 cycles | 5. 6 cycles |
| 3. 4 cycles |             |

#### **Area 8 – Continuous**

If selected (Repeat), alarms continue to transmit until reset. (Escalate) - Level 1, 2, 3 will continue to cycle until reset.

Note: activation of this feature will reduce battery life.

1. Yes
2. No

### Area 9 – LED Blink

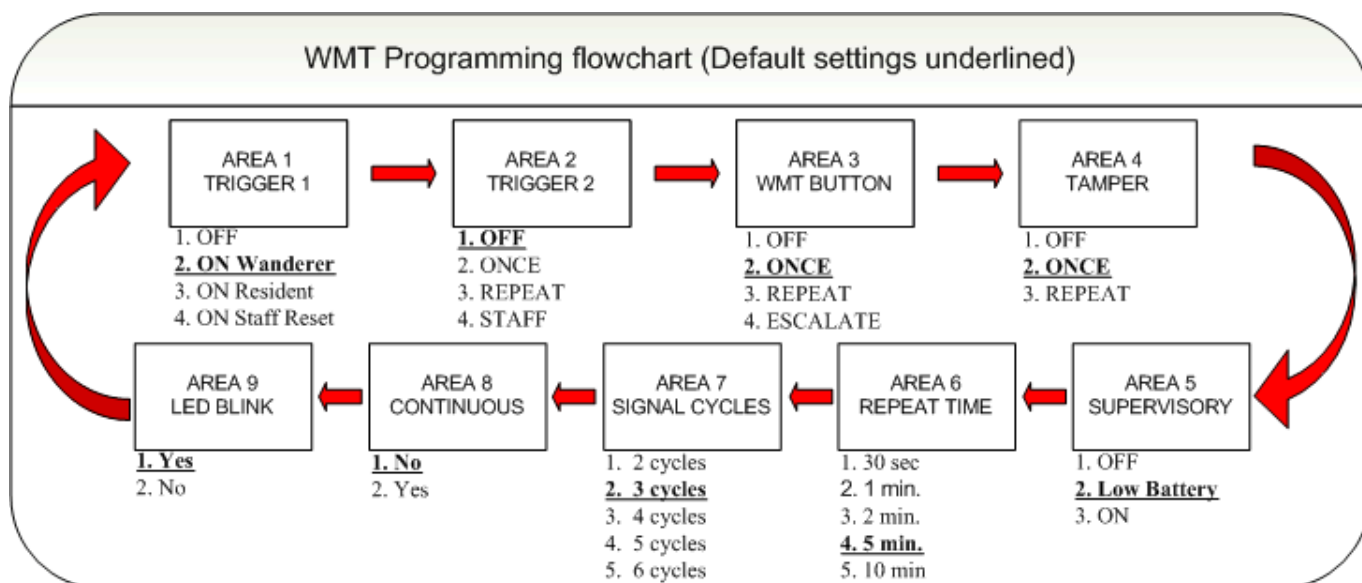
If selected, the LED will blink for visual notification that the WMT is in a repeat or escalation mode. When magnetically reset, the LED blink stops. Note: activation of this feature will reduce battery life.

1. Yes
2. No

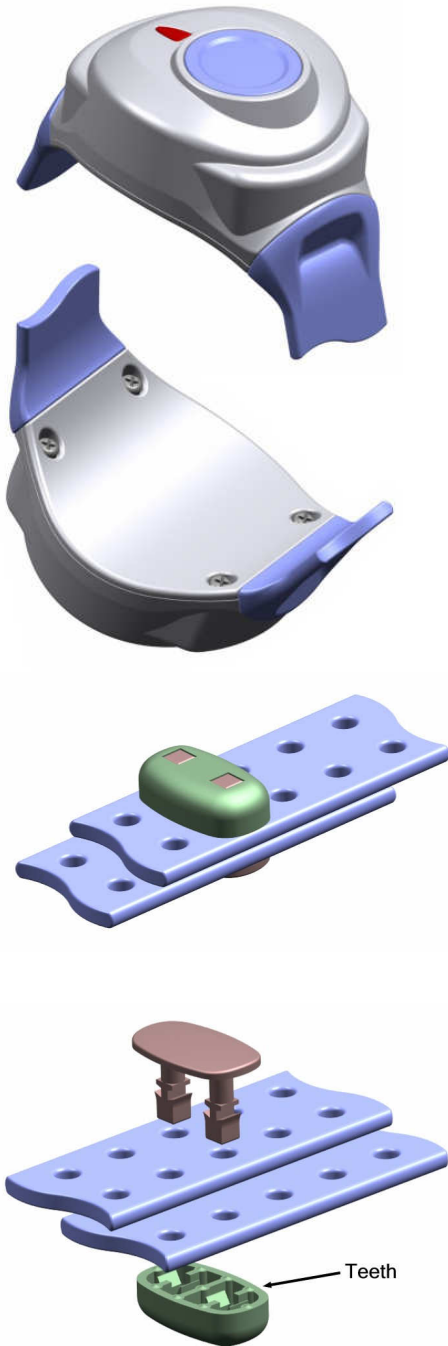
## 4.3

## Transmitter Programming

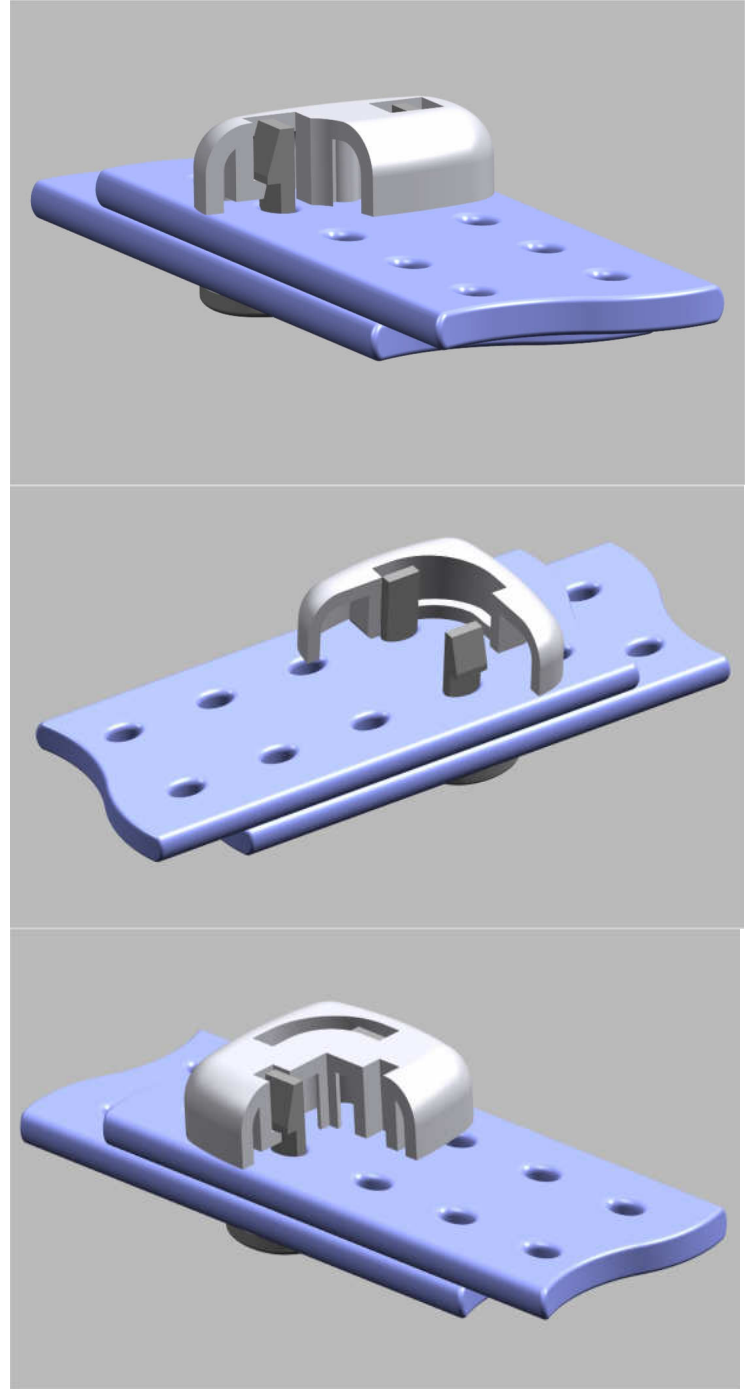
To enter programming mode, apply the jumper on the back of the circuit board. The LED will flash long flashes to match the program area and short flashes to indicate program choice within each program area. To move along to other program areas, hold the button in for the count of 3 and then release. Continue this process until you reach your desired program area. You do not have to wait for LED Blinks to move through program areas. Once you are at the program area you want to program, press the button for one second and release it to set the desired setting for each program area. The number of short blinks matches the program setting. (For your convenience there is a full page landscape view version of the WMT programming flowchart at the back of this manual.) Remove the jumper when finished programming.







Permanent Bracelet Assembly  
(Snapping Teeth in permanently)



Removable Bracelet Assembly  
(Twisting teeth in for easy removal)

# 5.0

## Appendix

This Manual provides instructions to install, configure, and test the Wander Protection System. For operating instructions, please see the Wander Protection System End-User Guide.

The Wander Protection System is configurable to meet the specific needs of the facility. Some common system configurations and applications are covered in this manual, as are the installation instructions on some of the more common accessories. This information is meant to provide a system overview. Please see the appropriate installation manual or sheet for detailed procedures.

*Note: The information contained in this manual is intended for the trained installer. The installer should be familiar with wiring in commercial and industrial enterprises; micro electronics, including static sensitive components; and radio frequency devices. Local wiring and building codes must be followed. If you do not have these skills, do not attempt to install the system.*

**5.1****Specifications**

**Number of Inputs:** 6 open or closed collectors

**Number of Outputs:** 6 open or closed collector type, 100mA max. Sinking current

**Number of Relays:** 1 form C relay rated at 1 amp at 12V DC

**Unit ID number:** Emulates the SR-500 8-bit code (2 hexadecimal digits)

**Communication Protocol:** SpiderAlert 1A

**Attendance Report Repetition Rate:** Once every 90 seconds

**Input Voltage:** 10 -16 VDC.

**Input Voltage:** 10 -16 VDC.

**Current Drain:** Approximately 30mA idle, 300mA maximum

**Operating Temperature Range:** -10°C to 49°C (14°F to 120°F)

**Dimensions (H X W X D):** 108 x 165 x 38 mm (4-1/4 x 6-1/2 x 1-1/2 in.)

**Weight:** 191 g (6.75 oz) – 300 g

**5.2****Warranty information**

DS Integrations, and its affiliates, (hereinafter collectively referred to as "the Manufacturer") warrants its products (hereinafter referred to as "the Product") to be free of defects in materials and workmanship under normal operating conditions and use for a period of one year from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period, at its option, to repair or to replace the defective Product or any defective component or part thereof. To exercise this warranty, the product must be returned to the manufacturer freight prepaid and insured.

This warranty does not apply to repairs or replacement caused by improper installation, Product misuse, failure to follow installation or operating instructions, alteration, abuse, accident, tampering, repair by anyone other than the Manufacturer, external causes, and failure to perform required preventive maintenance. This warranty also does not apply to any products, accessories, or attachments used in conjunction with the Product, including batteries, which shall be covered solely by their own warranties, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, resulting from a malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Product.

THE MANUFACTURER MAKES NO EXPRESS WARRANTIES EXCEPT THOSE STATED IN THIS STATEMENT. THE MANUFACTURER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE MANUFACTURER'S SOLE RESPONSIBILITY FOR WARRANTY CLAIMS IS LIMITED TO REPAIR OR TO REPLACE AS SET FORTH IN THIS STATEMENT.

The Manufacturer shall have no liability for any death, personal injury, property damage, or other loss whether direct, indirect, incidental, consequential, or otherwise, based on a claim that the Product failed to function. However, if the Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the Manufacturer's maximum liability shall be limited to the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive liability of the Manufacturer.

The Manufacturer shall not, under any circumstances whatsoever, be liable for any inaccuracy, error of judgment, default, or negligence of the Manufacturer, its employees, officers, agents, or any other party, or of the purchaser or user, arising from any assistance or communication of any kind regarding the configuration, design, installation, or creation of security system involving the Product, that being the responsibility of the purchaser or user.

If the Manufacturer is unable to make such repair or replacement, the Manufacturer's entire liability shall be limited to the cost of a reasonable substitute product.

The Manufacturer shall not be responsible for any dismantling, installation, reinstallation, purchasing, shipping, insurance, or any similar charges.

The Manufacturer shall have no liability for any damages, including without limitation, any direct, indirect, incidental, special, or consequential damages, expenses, costs, profits, lost savings or earnings, or other damages arising out of the use of the Product or the removal, installation, reinstallation, repair or replacement of the Product or any related events. In the event that there is any liability against the Manufacturer, such liability shall be limited to the purchase price of the Product which amount shall be fixed as liquidated damages.

The purchaser and user understand that this Product may be compromised or circumvented by intentional acts; that the Product will not in all cases prevent death, personal injury, property damage, or other loss resulting from burglary, robbery, fire or other causes; and that the Product will not in all cases provide adequate warning or protection. The purchaser and user also understand that a properly installed and maintained alarm may reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such events will not occur or that there will be no death, personal injury, property damage, or other loss as a result of such events.

By purchasing the Product, the purchaser and user shall defend, indemnify and hold the Manufacturer, its officers, directors, affiliates, subsidiaries, agents, servants, employees, and authorized representatives harmless from and against any and all claims, suits, costs, damages, and judgments incurred, claimed, or sustained whether for death, personal injury, property damage, or otherwise, because of or in any way related to the configuration, design, installation, or creation of a security system involving the Product, and the use, sale, distribution, and installation of the Product, including payment of any and all attorney's fees, costs, and expenses incurred as a result of any such events.

The purchaser or user should follow the Product installation and operation instructions and test the Product and the entire system at least once each week. For various reasons, including but not limited to changes in environmental conditions, electric, electronic, or electromagnetic disruptions, and tampering, the Product may not perform as expected. The purchaser and user are advised to take all necessary precautions for the protection and safety of persons and property.

This statement provides certain legal rights. Other rights may vary by state or country. Under certain circumstances, some states or countries may not allow exclusion or limitation of incidental or consequential damages or implied warranties, so the above exclusions may not apply under those circumstances and in those states or countries.

The Manufacturer reserves the right to modify this statement at any time, in its sole discretion without notice to any purchaser or user. However, this statement shall not be modified or varied except by the Manufacturer in writing, and the Manufacturer does not authorize any single individual to act on its behalf to modify or vary this statement.

Any questions about this statement should be directed to the Manufacturer.

## 5.3

## Applications

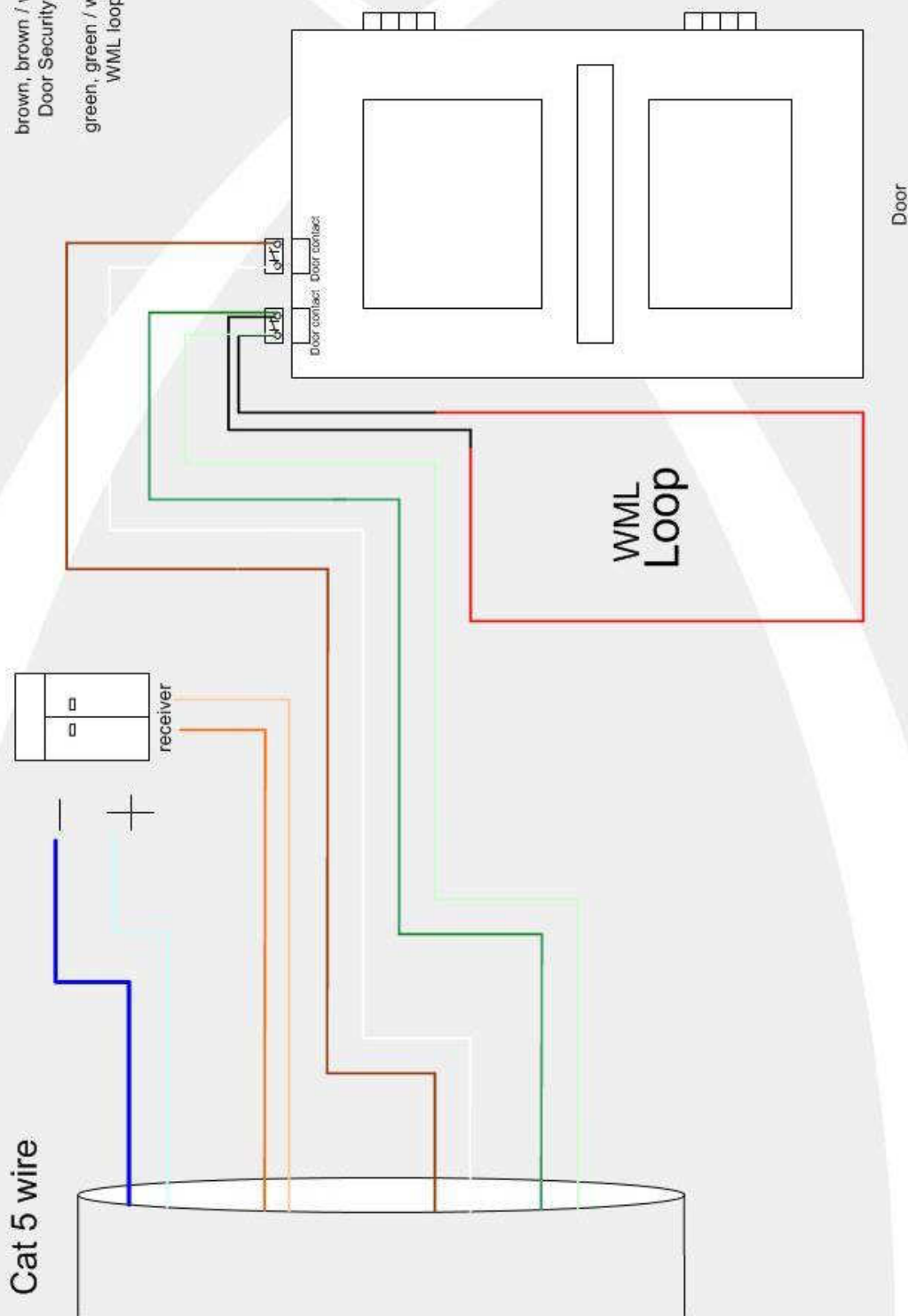
# Wandering Patient (Each Door's Setup)

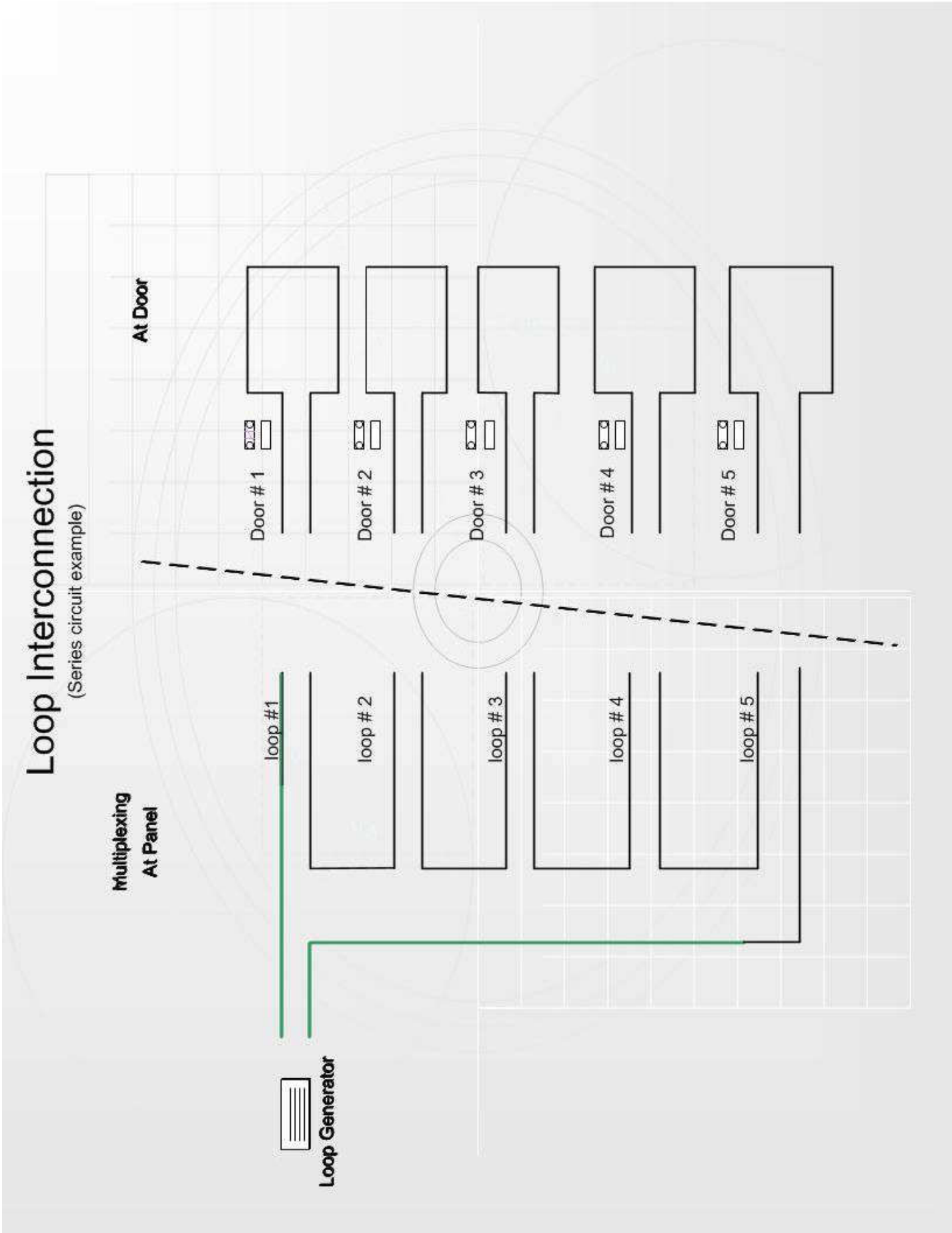
blue, blue/white = WMC 12V DC power

orange, orange / white = Spider Alert Data

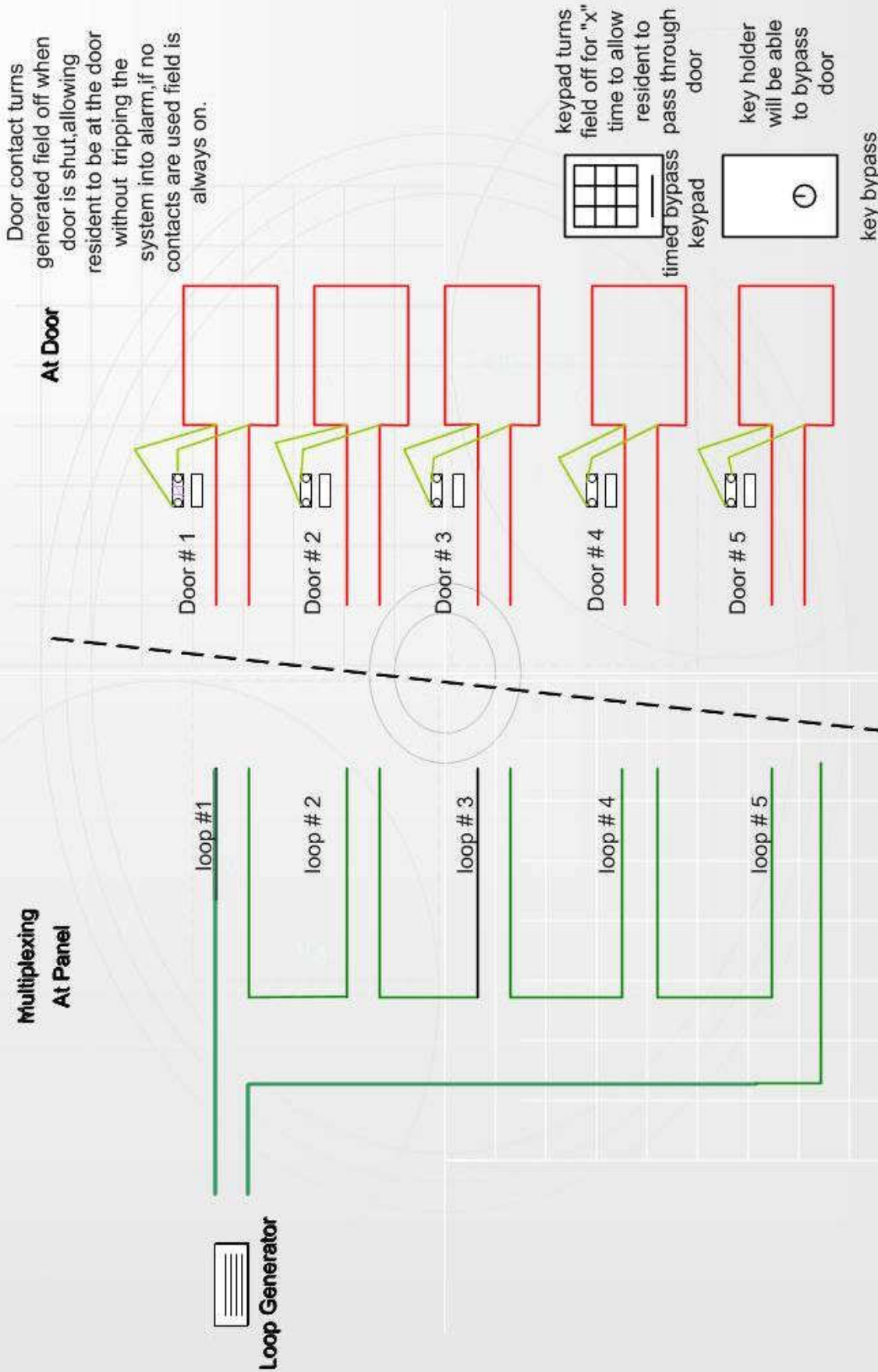
brown, brown / white = Door Security loop

green, green / white = WML loop



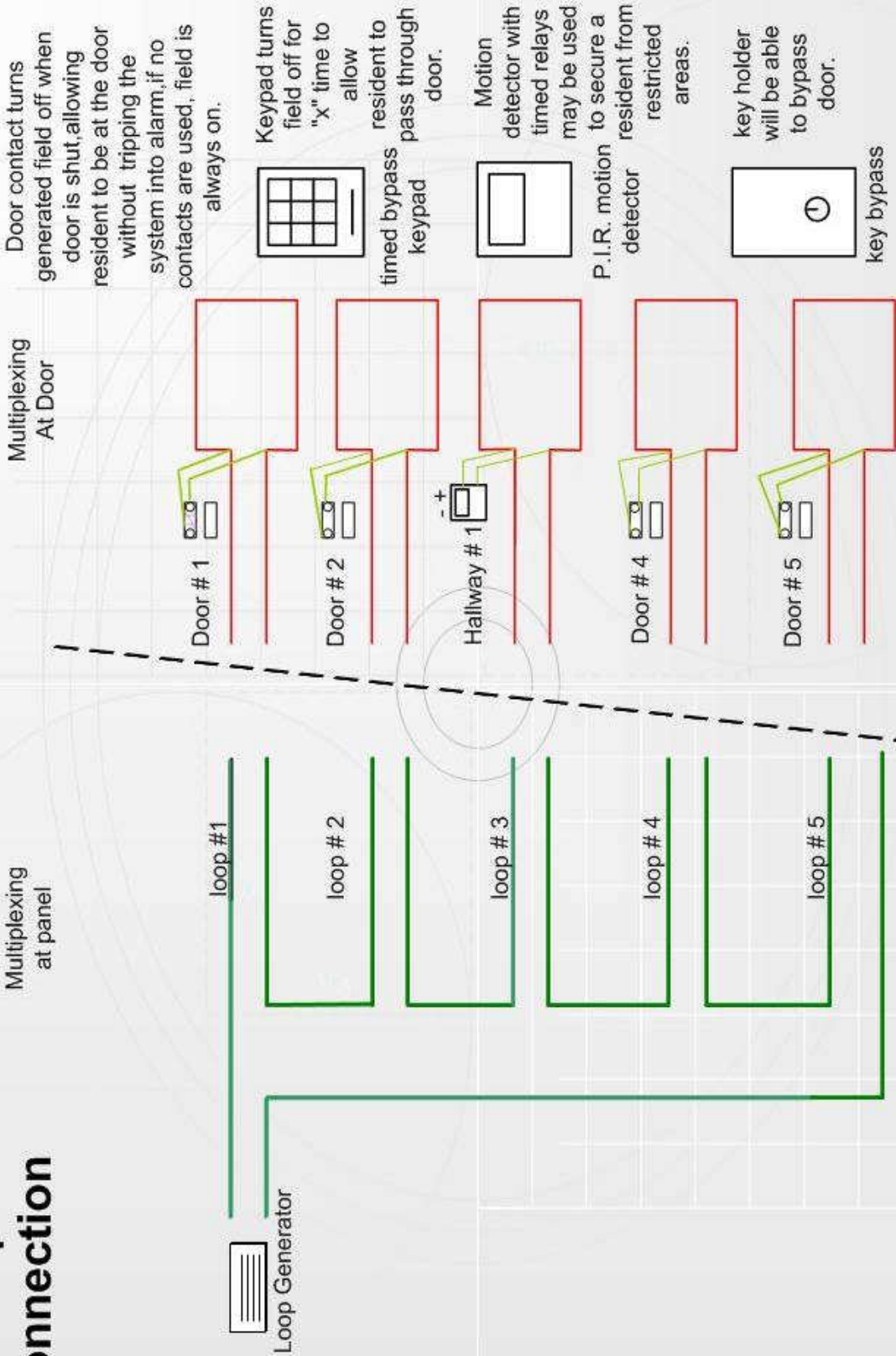


# Loop Interconnection



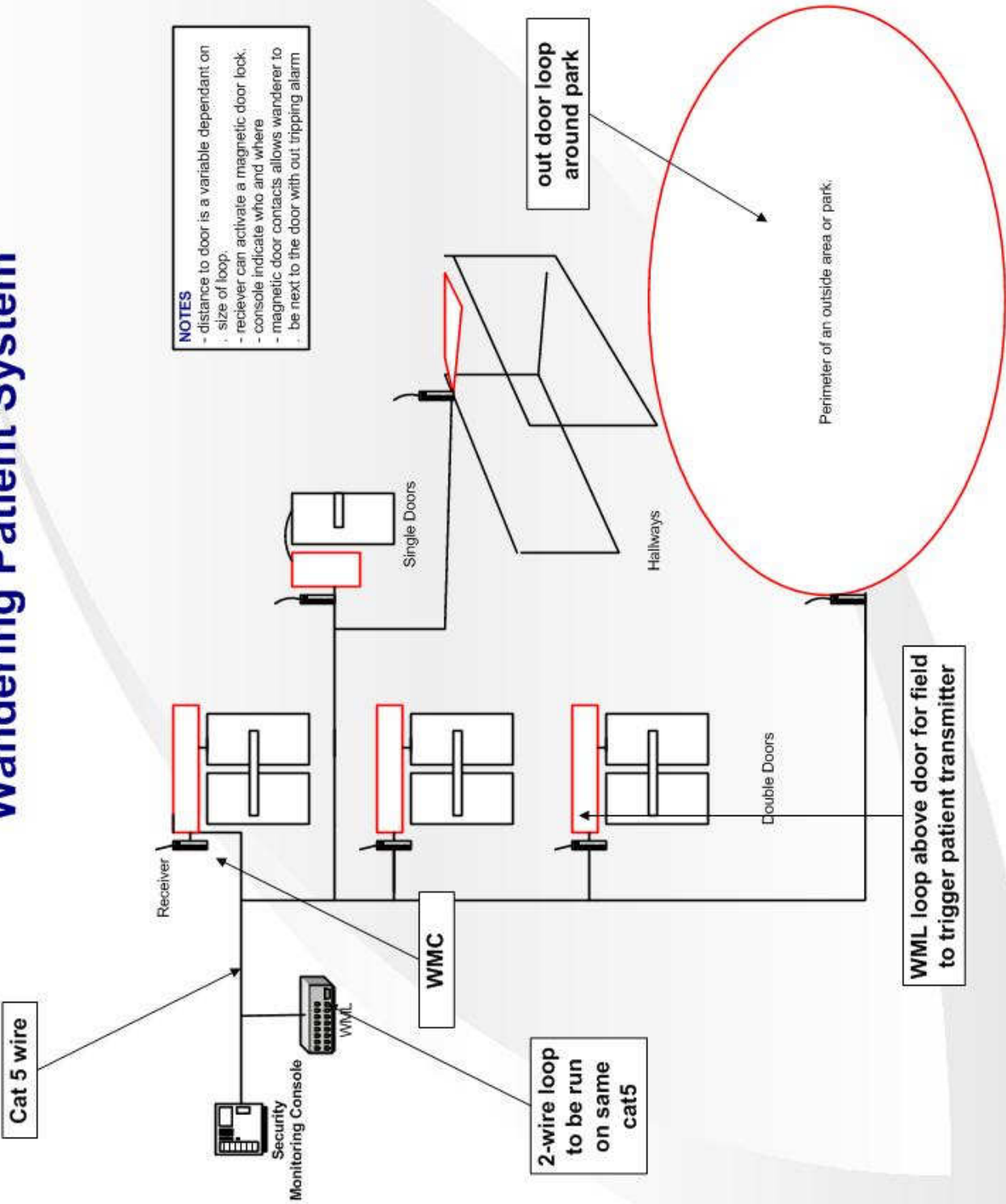
# Loop connection

## Optional Accessories



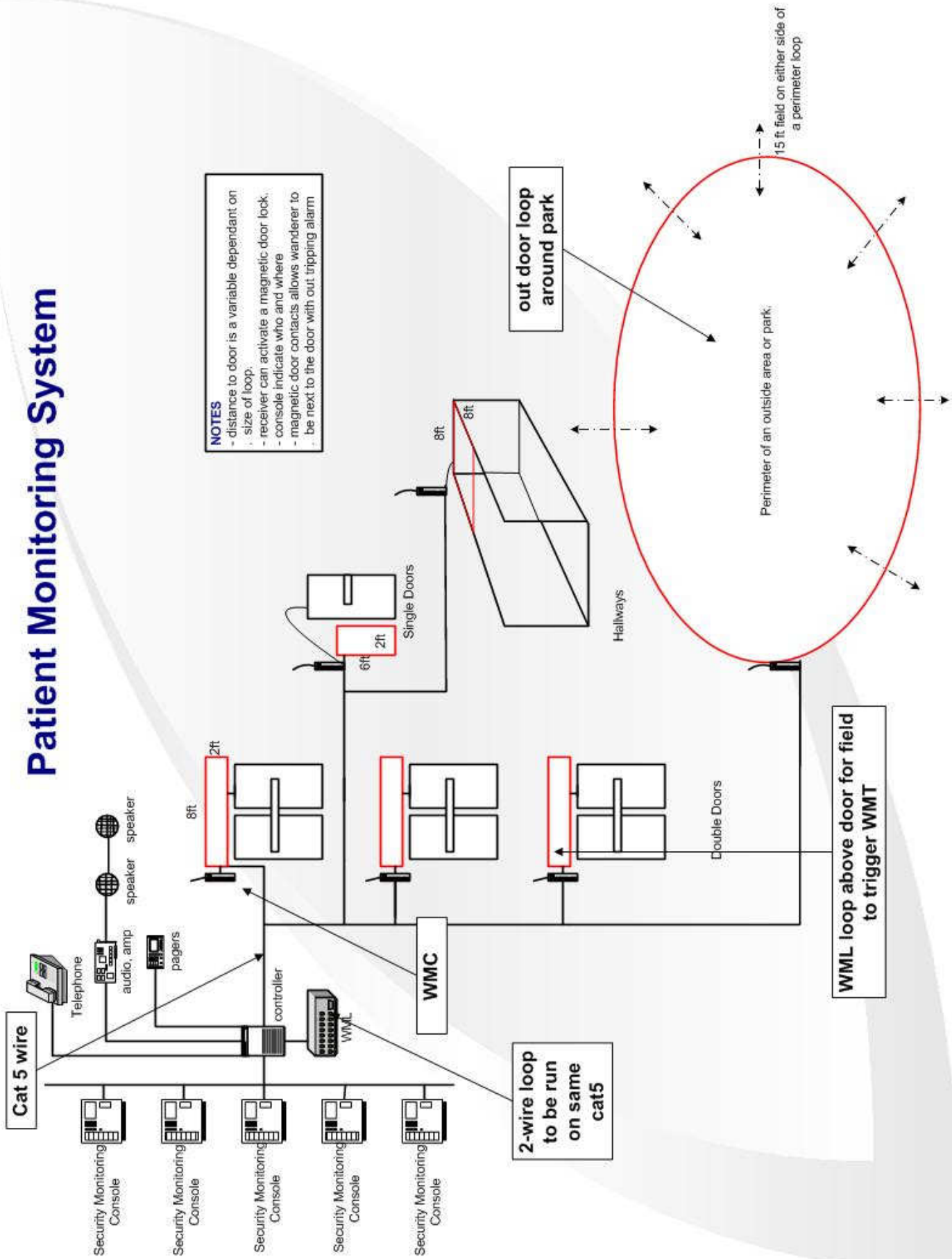


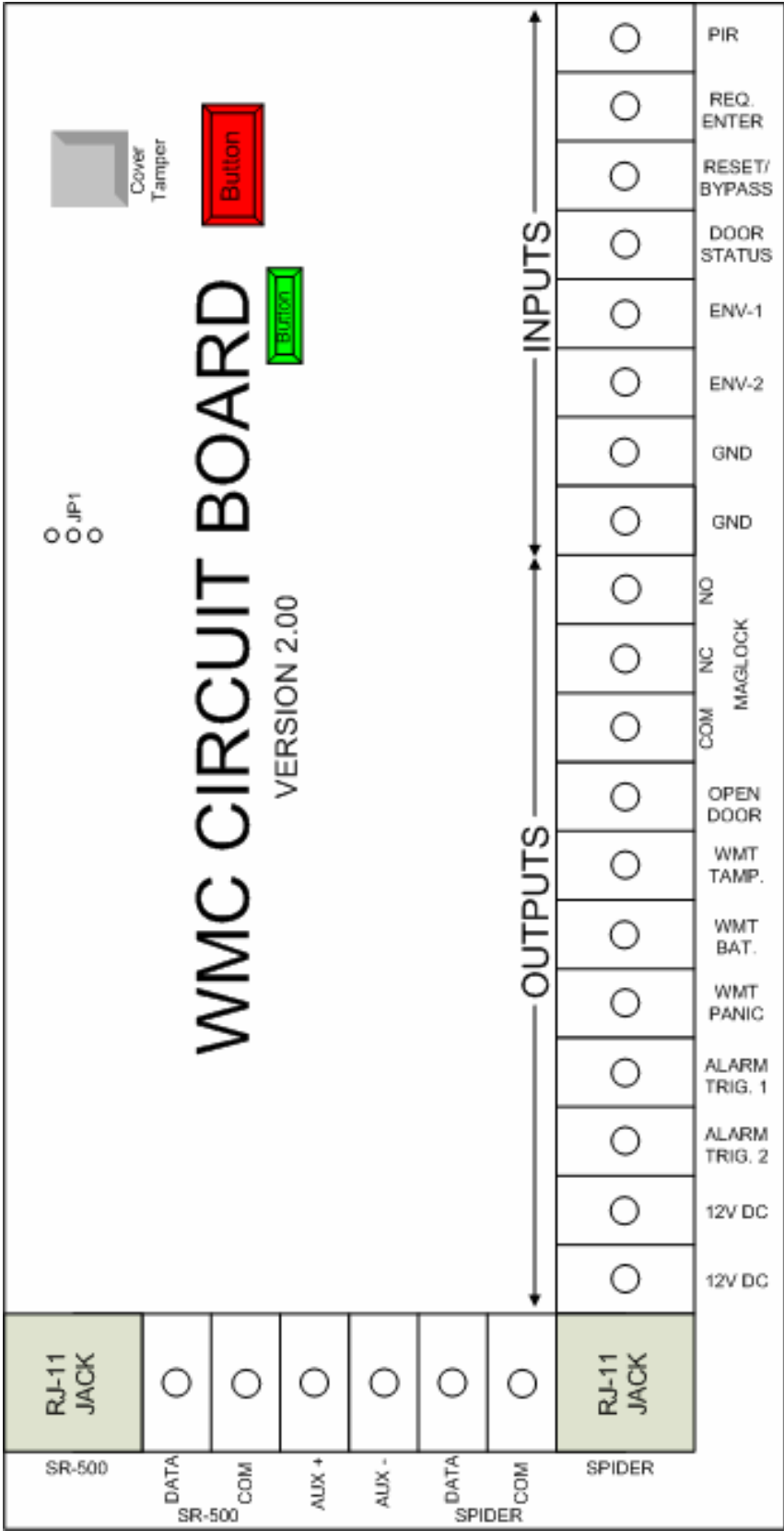
# Wandering Patient System





# Patient Monitoring System





This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.