REV. G

American Panel
Versatile, Dependable Walk-Ins and Blast Chillers

Cooler is **Better!™**

Owner's Manual

Walk-in Monitoring System 100

Used in UL Listed Door Panel Assemblies

American Panel Corporation
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Thank you, and congratulations on your purchase of an American Panel Walk-in Monitoring System 100. We take great pride in engineering and manufacturing each of our products. With the goal of providing the highest accuracy and quality possible, our state-of-the-art manufacturing and quality control facility enables us to continually explore new technologies so that we can provide you with the finest equipment in the industry.

Because of our commitment to your satisfaction, we have developed this Owner's Manual to guide you through the complete installation process, and to help you maintain your equipment properly. Familiarization and compliance with this manual will ensure you years of trouble-free operation.

On occasion situations can arise and will require the help of the factory, whether it be technical information, service or replacement of parts. We have a highly trained Customer Service and Parts Department available to help when these situations arise. We also offer a national network of service agencies that may be contacted for warranty and out-of-warranty service.

When contacting the factory, please refer to the equipment serial number which can be located on the identification plate positioned on the interior of the door frame.

Thank you once again for your purchase of American Panel equipment.

"Our reputation rests on the steadfast pursuit of your satisfaction".

American Panel
Versatile, Dependable Walk-Ins and Blast Chillers

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1 Introduction and Features

WALK-IN MONITORING SYSTEM 100 (WIMS 100) was designed by American Panel Corporation to address multiple issues regarding walk-in units and to incorporate the functionalities of various walk-in door devices in a single flexible, reliable, and user friendly controller.
WIMS 100 features:

- Walk-in Temperature Monitoring
- Walk-in Temperature Alarms
- External Alarm Output With Direct 115VAC, Up To 150W
- Door Frame Heater Temperature Controlling
- Door Frame Heater Temperature Monitoring
- Electronically Controlled Light Switch With Light On/Off Indicator
- Automatic Light Off
- External Switch Connection For CAL-OSHA Back-To-Back Light Control (Optional)
- Celsius Or Fahrenheit Temperature Selection

1.1 Temperature Monitoring and Alarms

To efficiently monitor the walk-in air temperature, WIMS 100 is equipped with a highly accurate temperature probe mounted inside the walk-in. The ultra bright LED display indicates the air temperature at all times.

The controller alarm system is comprised of a high and low temperature alarm with built in trigger delay to allow small temperature fluctuations (occurring in daily walk-in operations such as door openings, door closings, and evaporator defrost cycles) without triggering the alarms. The alarm's set points and delay times are fully programmable to the user's needs.

In case the air temperature inside the walk-in is reaching an alarm condition, WIMS 100 uses visual and audible alert methods. In addition to the integrated buzzer and alarm display message, the controller has a 115V/60Hz/150W output for additional external alarm devices (optional).

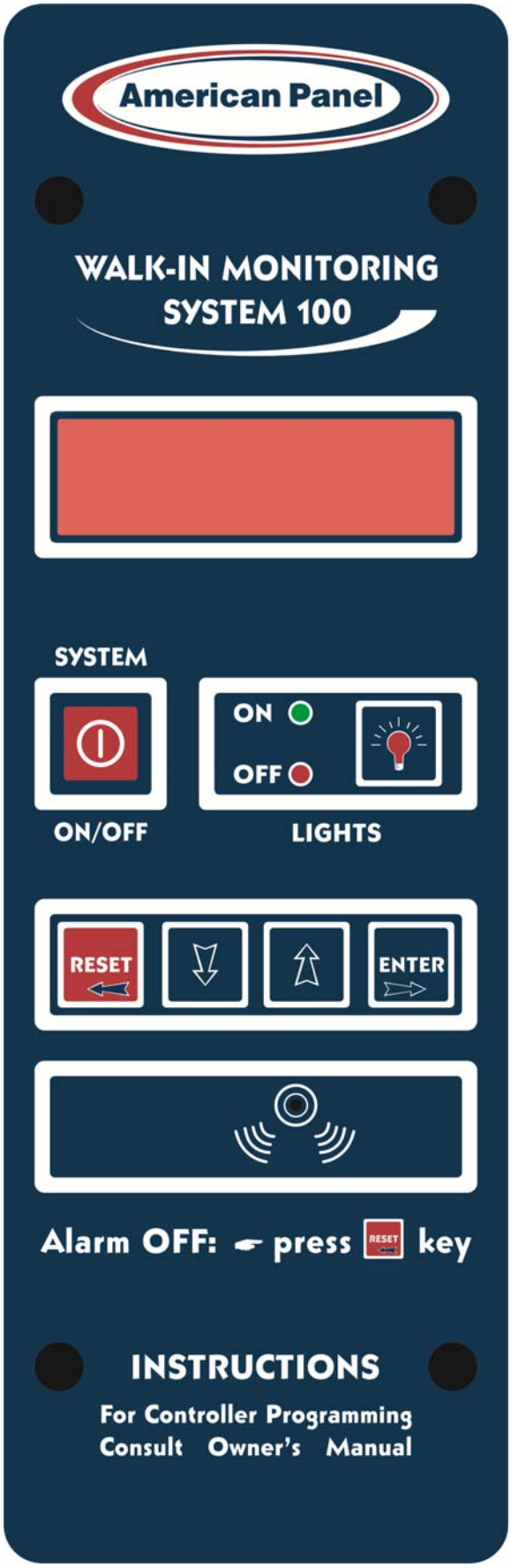
1.2 Door Frame Heater Temperature Control and Monitoring

Door frame heater control and monitoring is done by two different methods that work in conjunction to save energy and to maintain the door frame heater temperature within a preset range.
A temperature probe is mounted on the door frame heater wire to accurately monitor its temperature. Viewing the door frame heater temperature is as easy as pressing a button.

1.3 Electronically Controlled Light Switch and Automatic Light Off

The flexibility of WIMS 100 allows the user to operate the light from multiple locations such as multiple doors. The integrated light button is equipped with two LED lights to display the ON/OFF status of the light and also to indicate the button location in the dark.
The Automatic Light Off feature of WIMS 100 enables the user to save energy. The amount of time the light will stay on can be set from 1 minute to 60 minutes, or can be set for manual shut off only.
Back-to-back light control is provided as an optional feature.

2 Controller



3 Parameter Programming

All American Panel Corporation walk-in monitoring systems are programmed at the factory. The settings in this manual are considered default for WIMS 100 and were established to suit generic walk-in operating environments. However, the customer may change any of these settings as required.

Note: During the programming steps, any delay longer than one minute before pushing the next button will cause the controller to revert to the "OFF" state. To avoid this, the following instructions should be carefully reviewed and the desired settings should be determined before proceeding.
If the controller goes to the "OFF" state, the programming mode will have to be restarted.

Note: During programming, pressing and holding the UP or DOWN button will increase the programming speed.

The instructions below contain screens with the exact messages displayed by the controller during the programming procedure. Follow the notes located to the left of these screens.

Before entering the programming mode, the controller has to be in the "OFF" state.

If it is not, press and hold  for five seconds.

The display will show: 

To enter the programming mode, press and hold 

for five seconds.

The display will show: 

Enter The Access Code

To enter the default access code, press the following buttons in order:  

 .

When finished, press 

.

Note: If the code entered is not correct, the controller will display the error message and switch back to the previous screen.

Note: The access code is a safety feature that limits the access to the programming mode and therefore will prevent unauthorized personnel from tampering with the settings.

The display will show: 

After entering the code successfully, the controller will ask you if you want to change the code. To leave it unchanged, press 

.

The display will show: 

Press ENTER.

Door Frame Heater Settings

The display will show: 

This function will turn the door frame heater on or off.
By default, the door frame heater is set to on ("1"). If you wish to turn the door frame heater off, change the flashing value from "1" to "0" (off) by pressing ⇧ or ⇩.

Press ENTER when done.

Note: If you set the flashing value to "0", door frame heater off, the controller will skip to alarm settings. In case the flashing value is set to "1", door frame heater on, the controller will guide you thru door frame heater settings

---

The display will show: 

This function will display the walk-in temperature which will determine when the door frame heater will start. Set the air temperature inside the walk-in at which the door frame heater will start.

To do so press ⇧ to increase or ⇩ to decrease the flashing value representing the air temperature.

Press ENTER when done.

The display will show: 

(Default value for coolers)

(Default value for freezers)

This function will set the door frame heater temperature.

Press ⇧ or ⇩ to change the door frame heater temperature (the flashing value).
Once the door frame heater temperature reaches this setting, it will stay close to the set point according to the factory set differential. Note: Set the door frame heater temperature between 75^0F and 120^0F.

Press ENTER when done.

The display will show:

(Default value for coolers)

(Default value for freezers)

Press ↑ or ↓ to set the percentage (flashing value) of the 4 minute cycle which the door frame heater will stay on. The remaining time left of the 4 minute cycle the door frame heater will be off. This cycle will repeat for as long as the controller is on.
See the examples below.

Ex1: If the flashing value is set 75P (75%), the door frame heater will run for 3 minutes and it will be off for 1 minute. This cycle will repeat for as long as the controller is on.

Ex2: If the flashing value is set to 100P (100%), the door frame heater will run continuously.

Ex3: If the flashing value is set to 0P (0%), the door frame heater will not run at all.

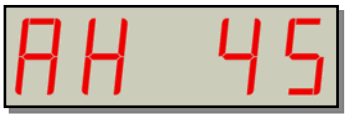
Ex4: If the flashing value is set to 50P (50%), the door frame heater will run for 2 minutes and it will be off for 2 minutes. The cycle will repeat for as long as the controller will be on.

Note: Do not set Door Frame Heater Percent to 0P (0%) unless you want to turn the door frame heater off.

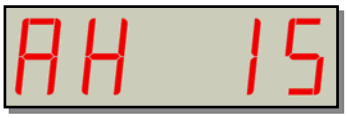
Press ENTER when done.

Alarm Settings - High Air Alarm

The display will show:



(Default value for coolers)



(Default value for freezers)

Press ↑ or ↓ to change the flashing value representing degrees Fahrenheit. If the air temperature goes above this set point, the alarm will go off.

Press ENTER when done.

Alarm Settings - Low Air Alarm

The display will show:

(Default value for coolers)

(Default value for freezers)

Press ↑ or ↓ to change the flashing value representing degrees Fahrenheit. If the air temperature goes below this set point, the alarm will go off. You can set low air alarm anywhere between -30^{0}F and 50^{0}F.

Press ENTER when done.

Alarm Settings - Time Delay

The display will show:

Press ↑ or ↓ to change the flashing value representing minutes.
If the air temperature goes out of the preset limits the alarm will go off only after the time set here elapses. The alarm time delay can be set anywhere between 0 (no delay) and 60 minutes.

Press ENTER when done

Light Off Delay

The display will show:

Next the controller will prompt you to set the automatic light off delay.
The automatic light off delay is the elapsed time between the moment the user turns the light on and the moment the controller will automatically turn it off.

Set the automatic light off delay by pressing ↑ or ↓ to change the flashing value representing minutes. The automatic light off delay can be set between 1 and 60 minutes. In case the customer does not want an automatic light off delay, set this function to "∞".

Press ENTER when done.

The display will show:

4 Air Temperature Probe Offset

As standard, the air temperature probe is located on the door frame, inside the walk-in. The WIMS 100 will display the air temperature at that particular location **ONLY**. However, WIMS 100 can be adjusted to estimate the temperature of a remote location inside the walk-in.

4.1 Calculating the Probe Temperature Offset

- Establish the location inside the walk-in where you want to monitor the air temperature. Ex: Return Air Temperature (behind the evaporator)
- Using a calibrated thermometer, measure the air temperature at that particular location. $\mathbf{T_{MEASURED}}$
- Read the air temperature on the display of WIMS 100. $\mathbf{T_{WIMS\ 100}}$
- The temperature difference between the two temperatures is the temperature offset. $\mathbf{T_{OFFSET}}$

Ex: Return Air Temperature (measured behind the evaporator) 37^0F
WIMS 100 Displayed Temperature 40^0F
The Temperature Offset will be: $(37^0F) - (40^0F) = -3^0F$

4.2 Adjust the Probe Temperature Offset

Make sure the controller is in "OFF" state.

If it is not, press and hold  for 5 seconds.

The display will show: 

Press and hold 

for ten seconds.

The display will show: 

To enter the default access code, press the following buttons in order:  

 .

When finished, press 

.

The display will show: 

Press  or  to change the displayed unit of temperature.

When finished, press 

.

The display will show: 

Press 

, to skip.

The display will show: 

Press 

, to skip.

Adjust the Air Probe Temperature Offset

The display will show: 

Press  or  to match the flashing value with the temperature offset (T_{OFFSET}) calculated in the previous chapter (4.1).
The temperature reading at the temperature probe will automatically be changed by the temperature offset entered.

When finished, press 

.

The display will show: 

Press 

, to skip.

The display will show: 

Press 

, to skip.

The display will show: 

You have finished adjusting the probe temperature offset. Press  to turn the controller on. The display will reflect the air temperature at the desired location.

Note:
The air probe temperature offset is not to be used to make up for undersized or defective refrigeration systems. If a different temperature is desired inside the walk-in, contact a refrigeration technician to adjust your refrigeration system.

Special care should be taken when adjusting the air probe temperature offset. You should never adjust the air probe temperature offset for more than 5^0F.

American Panel Corporation is not responsible for any losses such as food spoilage resulted from misusing the air probe temperature offset.

5 Change the Access Code

To change the Access Code, you have to enter the programming mode. Follow the instructions below.

Before entering the programming mode, the controller has to be in the “OFF” state.

If it is not, press and hold  for 5 seconds.

The display will show: 

To enter the programming mode, press and hold  for five seconds.

The display will show: 

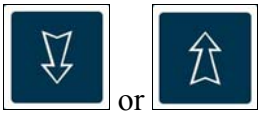
Enter The Access Code

To enter the default access code, press the following buttons in order: 

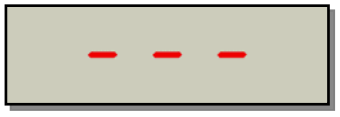
When finished, press  .

The display will show: 

After entering the code successfully, the controller will ask if you want to change the access code.

To change the code, change the flashing value to “1” by pressing  or and then press  .

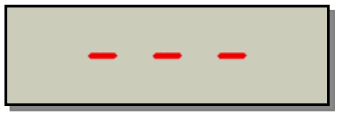
Enter The New Code

The display will show: 

Enter any three key combination of the following buttons: 

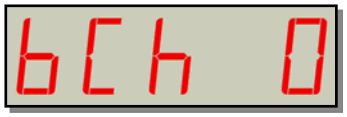
Next, the controller will display for a second the message shown in the figure below and then switch to the three dashes display.

The display will show: 

The display will show: 

Re-enter the new code.

After successfully re-entering the new code, the controller will briefly display the message shown in the figure below.

The display will show: 

If you wish to skip parameter programming press ENTER until you get to the OFF message.
To change the controller parameters, see the "Parameter Programming" section of this manual.

Make a note of the new code.

6 Restore the Default Settings

9. To restore the default settings, press and hold  and  for ten seconds.
10.
11. The display will show: 

Press ENTER.
12.

Note: After restoring the default settings, you may have to reprogram the controller. Pay special attention to the door frame heater settings.

7 Operating WIMS 100

7.1 Turn On the Controller

From the “OFF” state, turn the controller on by pressing  .
The controller needs to stay on in order to operate. Leave it on at all times.

7.2 Read the Walk-in Air Temperature

When on, the LED display will indicate the inside air temperature of the walk-in at all times.

7.3 Read the Door Frame Heater Temperature

WIMS 100 monitors and controls the door frame heater temperature at all times.

To display the door frame heater temperature, press and hold  . The display will indicate the door frame heater temperature. As an example see the illustration on the right.

When  is released, the controller will switch back to air temperature display.

7.4 Operate the Light Switch

To turn the light on, press  . The green LED, next to the light button, will illuminate indicating ON status of the light. To turn the light off, press  one more time. The green LED will go off and the red LED will illuminate indicating OFF status of the light. If the automatic light off feature is enabled, the light will turn off automatically after the preset time expires.
If a back-to-back light control option was purchased, the light can be switched on and off from the provided button.

7.5 High Alarm

If the air inside the walk-in goes above the preset high limit, the alarm will go off.

The buzzer will go off and the display will flash the following message:

7.6 Low Alarm

If the air inside the walk-in goes below the preset low limit, the alarm will go off. Just as in high alarm event, the buzzer will go off and the display will flash the following message:

In both cases, Low Alarm and High Alarm, the integrated alarm buzzer and the optional external alarm can be turned off by pressing 

. However, the visual alarm message will stay on the display until the air temperature enters the preset range.

8 Error Messages

Problems beyond the routine maintenance would most likely involve the refrigeration system or the control system. Please contact the factory for assistance if this should occur. Note that the warranty would be voided if these components are serviced by other than trained technicians approved by the manufacturer.

There are two error messages that could occur on WIMS 100 display:

Air probe is not good

Heater probe is not good

If any of the error messages occur call a technician to check the integrity of the probes.

Here is a chart with acceptable electrical resistance (Ohm) at various temperatures for the temperature probes.

°C	°F	kOhm
0	32	27.28
25	77	10.00

9 Field Wiring

Note: All field wiring must be done by a licensed electrician in compliance with the national and local electrical codes.

Note: Electrician must provide seal-offs at every conduit entry on warmer side of panels. Seal inside and around all conduits where passing through panels.

Make all the connections inside the j-box located on the door frame inside the walk-in, next to the vapor proof light fixture.

If an electrical stub-out construction was requested, all the connection wires will be stubbed-out thru the ceiling. In this case, the field connections will be made in a j-box provided by the installer.

9.1 Light Connection – Additional Light and 3 Way, 4 Way Light Operation

Note: Check the blue print to find out which doors interconnect, if any.

Consult the electrical schematics 98033-00, 98033-01, or 98033-02 at page 19 for any special lighting configuration (3 way, 4 way application).
For additional light connection, consult electrical schematic 98021-00, at page 15

9.2 External Alarm Connection (Optional)

As a standard configuration, system 100 is equipped with an external alarm output (120V for up to 150W) for a third party audible/visual alarm.
Make the external alarm connections inside the main j-box at terminal blocks labeled 8 and 9; see electrical schematic 98021-00 at page 15.

Note: If the system is equipped with the optional dry contact, terminal blocks 8 and 9 will be replaced by a relay to provide the dry contact option.

9.3 Dry Contact Connection - For Temperature Alarm Remote Notification (Optional)

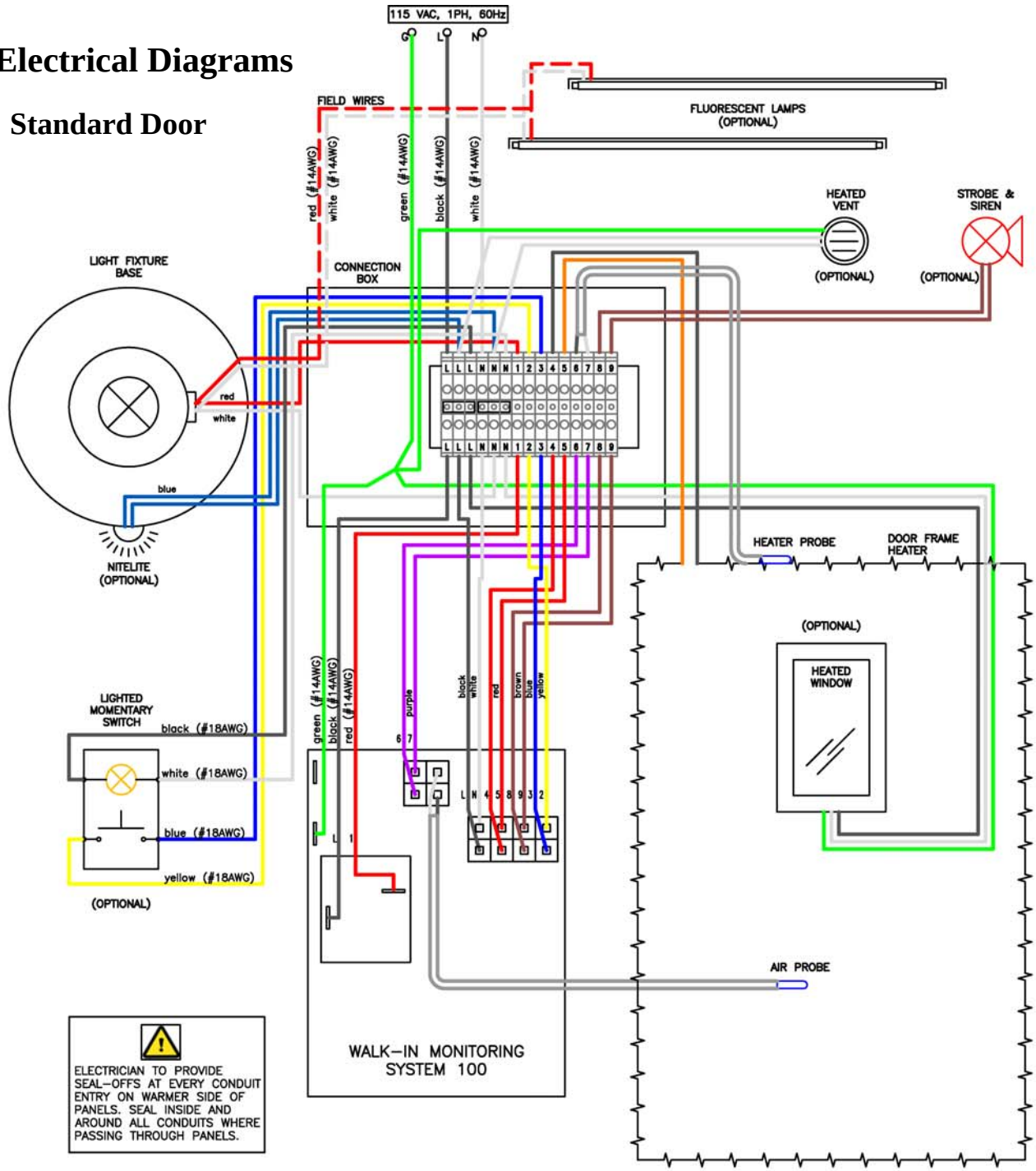
The dry contact relay (labeled AL) is located in the main j-box (above the door on the interior of the cabinet). Connect to the relay terminals 14 and 11 for the normally open dry contact; see electrical schematic 98021-25 at page 17.
If an electrical stub-out construction was requested, two brown wires from the relay terminals 14 and 11 will be stubbed-out thru the ceiling.

9.4 Dry Contact Connection – For Power Failure Remote Notification (Optional)

The dry contact relay (labeled W) is located in the main j-box (above the door on the interior of the cabinet). Connect to the relay terminals NO/NC (see el. schematic 98021-25 at page 17), according to the requirements of the notification device (phone dialer).
If an electrical stub-out construction was requested, two purple wires from the relay terminals 12 and 11 will be stubbed-out thru the ceiling. In the event of power loss, the dry contact will close. If an open action is needed (if power loss), check the electrical schematic on the relay, the wire at the relay terminal 12 could be moved to relay terminal 14.

10 Electrical Diagrams

10.1 Standard Door

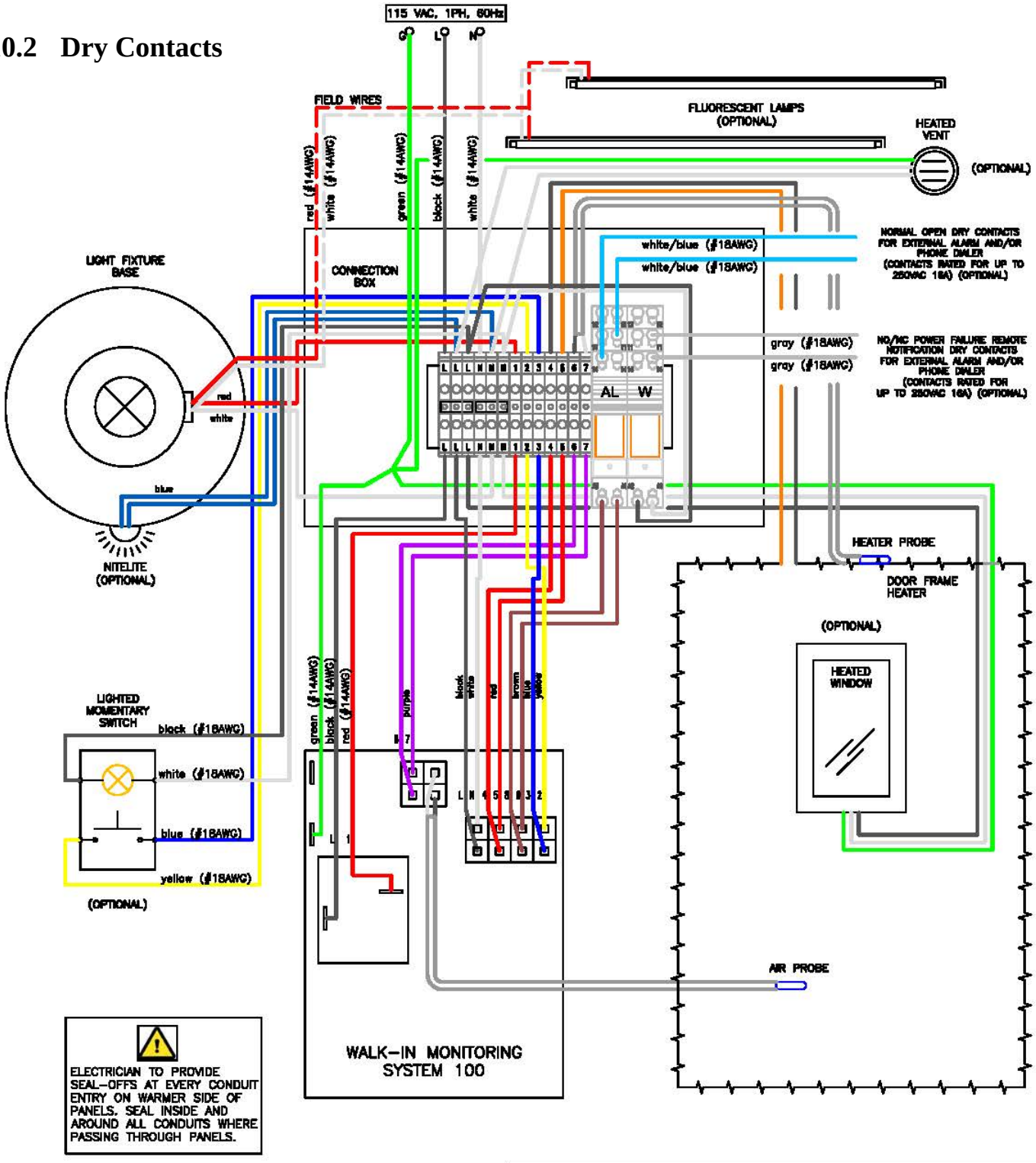


REV.	DATE	DESCRIPTION	REV. BY	APP. BY

American Panel
AMERICAN PANEL CORPORATION
5800 S.E. 78th St. Ocala, Florida 34472
Ph. (352) 245-7055 Fax (352) 245-0726

TITLE: WIRING DIAGRAM (1DOOR)			
MODEL: WALK-IN MONITORING SYSTEM 100			
DATE: 02/29/08	DRAWN BY: GC	P.O.#:	REV F
SCALE: NTS	DWG#: 98021-00	JOB#:	SHEET 1 of 1

10.2 Dry Contacts

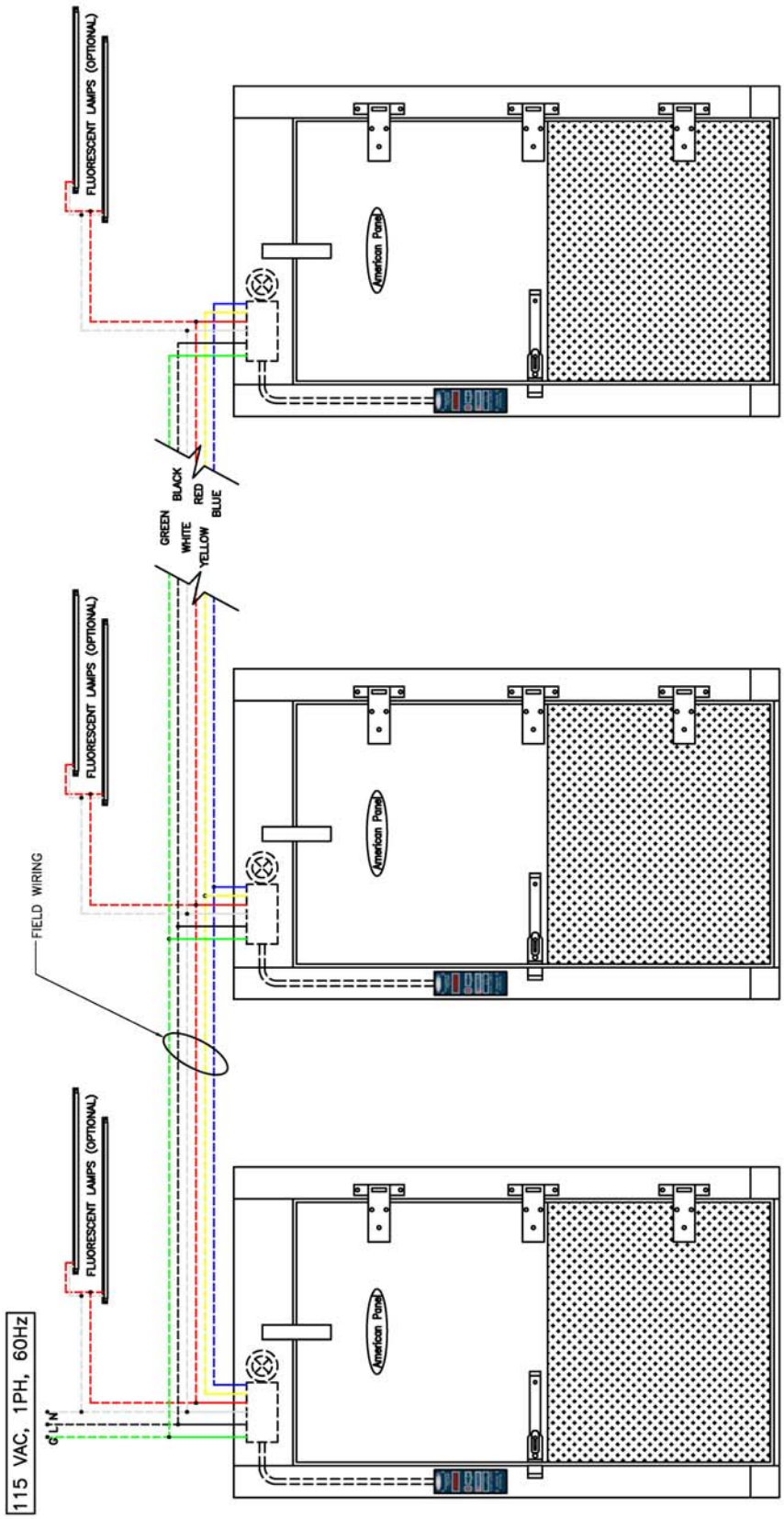


REV.	DATE	DESCRIPTION	REV. BY	APP. BY
C	3/13/19	COLOR AND POS. DRY CONT. WIRES	RT	RT

American Panel
AMERICAN PANEL CORPORATION
5800 S.E. 78th St. Ocala, Florida 34472
Ph. (352) 245-7055 Fax (352) 245-0726

TITLE: WIRING DIAGRAM (1DOOR)			
MODEL: WIMS 100 (WITH DRY CONTACTS AND PF REMOTE NOTIF.)			
DATE: 06/15/11	DRAWN BY: RT	P.O.#:	REV C
SCALE: NTS	DWG#: 98021-25	JOB#:	SHEET 1 of 1

10.3 3 Way – 4 Way Light Control



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American Panel

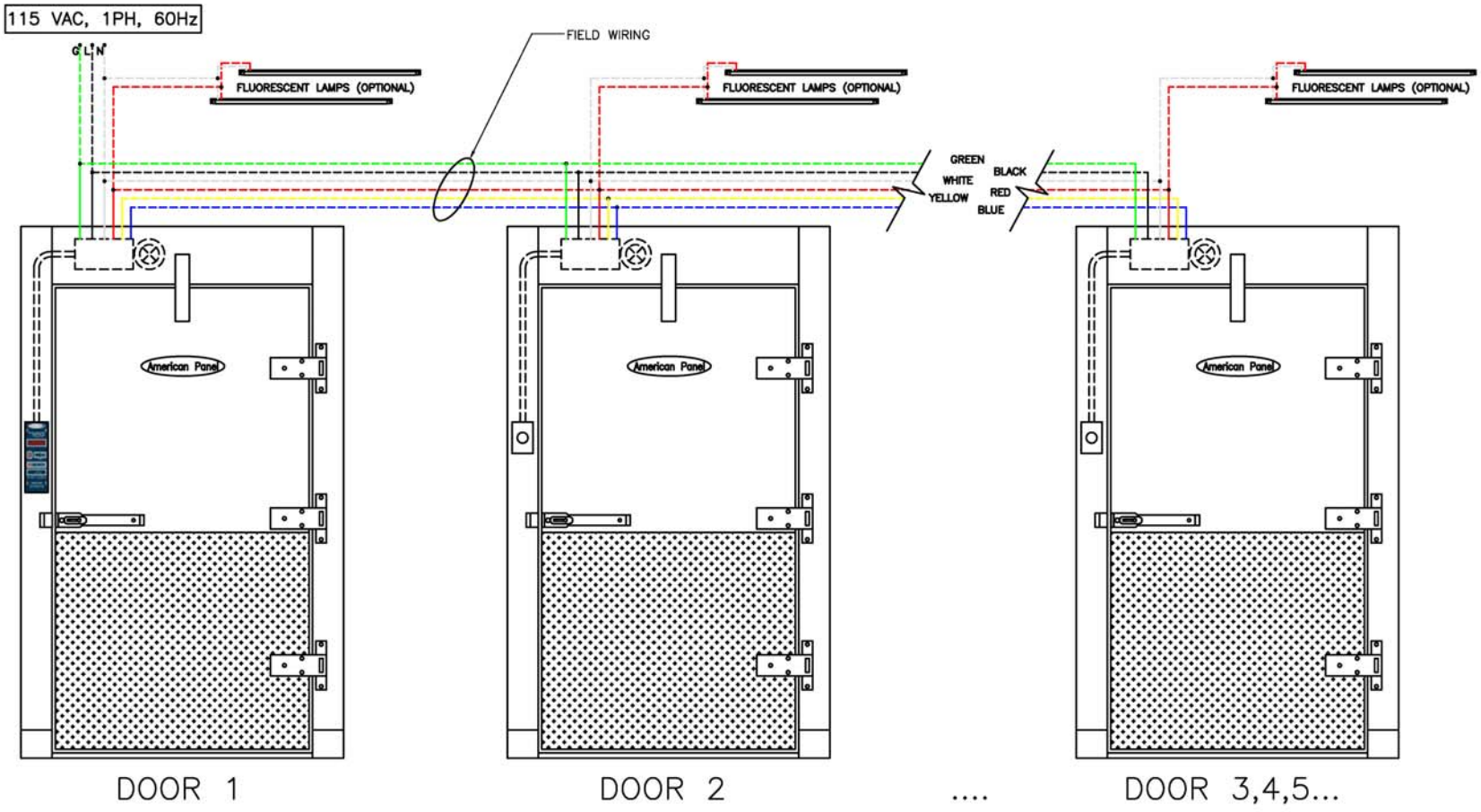
AMERICAN PANEL CORPORATION
5800 S.E. 78th St. Ocala, Florida 34472
Ph. (352) 245-7055 Fax (352) 245-0726

TITLE: INTERCONNECTION WIMS

MODEL: WIMS 100\200\100B

DATE:	DRAWN BY:	P.O.#:	REV
08/04/11			A
SCALE: 3/8"=1'-0"	DWG#: 98033-00	JOB#:	SHEET 1 of 1

3 WAY, 4 WAY APPLICATION – SYSTEM TO MOMENTARY SWITCH CONNECTION
(CHECK THE BLUE PRINT TO FIND OUT WHICH DOORS INTERCONNECT)



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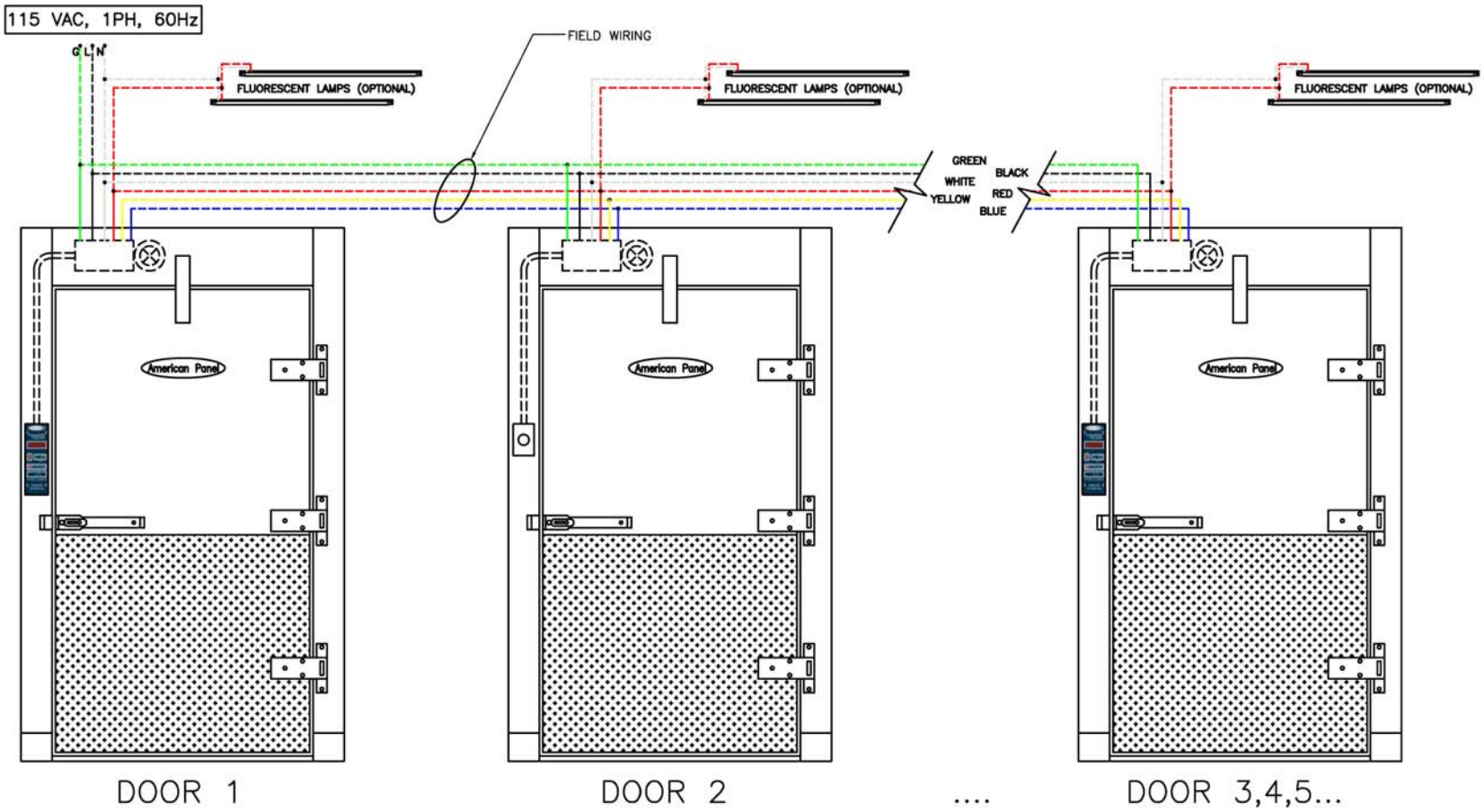
American Panel
AMERICAN PANEL CORPORATION
5800 S.E. 78th St. Ocala, Florida 34472
Ph. (352) 245-7055 Fax (352) 245-0726

TITLE: INTERCONNECTION WIMS + MOMENTARY SWITCH			
MODEL: WIMS 100\200\100B			
DATE: 08/04/11	DRAWN BY:	P.O.#:	REV A
SCALE: 3/8"=1'-0"	DWG#: 98033-01	JOB#:	SHEET 1 of 1

3 WAY, 4 WAY APPLICATION – MULTIPLE SYSTEMS TO MOMENTARY SWITCH CONNECTION
(CHECK THE BLUE PRINT TO FIND OUT WHICH DOORS INTERCONNECT)



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American Panel
AMERICAN PANEL CORPORATION
5800 S.E. 78th St. Ocala, Florida 34472
Ph. (352) 245-7055 Fax (352) 245-0726

TITLE: INTERCONNECTION WIMS+MOM SWITCH+WIMS			
MODEL: WIMS 100\200\100B			
DATE: 08/04/11	DRAWN BY:	P.O.#:	REV A
SCALE: 3/8"=1'-0"	DWG#: 98033-02	JOB#:	SHEET 1 of 1

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