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# MODULARM 75LC Multi-Monitor Installation & Operating

## NOTICES

**Before you start, please read these instructions thoroughly in order to obtain maximum benefit from the capabilities that this product offers.**

Thank you for purchasing the 75LC multi-monitor. The 75LC integrates sophisticated function with easy operation. Patented Autoset\* Technology, combined with common pre-programmed default settings eliminates the need for manual programming in most applications. PAS-PRO™ password programming allows for easy and secure custom configuration. All product functions and accessories may be used simultaneously or you may use only those required for your application. A simple, 3 button user interface combined with prioritized intuitive visual alarm display makes the 75LC extremely user friendly.

## OVERVIEW

### 75LC FUNCTIONS:

The 75LC offers the following functions: **(Patented Operation, other Patents Pending.)**

1. HI & LO Temperature Alarm with Patented Autoset Technology.
2. AC Failure Alarm with built-in rechargeable battery and built in recharging circuitry.
3. Door Ajar Alarm. *(Requires magnetic contacts. See pg. 3)*
4. Panic (Entrapment) Alarm *(Requires optional IP-1 Illuminated Button See pg. 3)*
5. Manual and patented timed light control.
6. HACCP monitoring. *(additional equipment required)*
7. Remote notification. *(additional equipment required)*
8. Built in audible alarm.

### \*What is Autoset?

Patented **Autoset** Technology selects the right alarm temp setpoints for monitoring a cooler or a freezer automatically, virtually eliminating the need for manual programming. Common cooler and freezer setpoints are pre-loaded into the 75LC. Autoset Setpoints are:

COOLER		FREEZER	
HI	42F (6C)	HI	10F (-12C)
LO	30F (-1C)	LO	-20F (-29C)

Cooler setpoints are the default settings, used for cooler monitoring. If the compartment is a freezer, **Autoset** detects the lower compartment temperature and **automatically** changes to the freezer setpoints. *(Freezer defaults won't revert to cooler defaults if temperature rises. Cooler defaults can be easily manually restored when necessary.)* Manually changing setpoints in the program menu automatically disables **Autoset**.

## THREE BUTTON USER INTERFACE:

### Test (Up):



### Lights (Prog):



### Silence (Down):



#### WHILE IN RUN OR ALARM MODE

**Test:** Press to test and to view alarm parameter settings.

**Lights:** Press to manually activate and deactivate compartment

**Silence:** Press to acknowledge an alarm.

#### WHILE IN PROGRAM MODE

**Up:** Press to increase and alarm parameter values.

**Lights:** Press to select PAS-PRO™ pre-set and program menu options.

**Down:** Press to decrease alarm parameter values.

## VISUAL ALARM ANNUNCIATION:

### NOTE the following:

1. During normal operation the monitored temp displays constantly.
2. Any abnormal or alarm condition *(except Panic Alarm)* alternates between monitored condition display and monitored temp as follows: *(In order of priority.)*

ALARM TYPE	ABNORMAL CONDITION	ALARM CONDITION
PANIC ALARM	(Non applicable)	"HLP" + "HLP"
DOOR AJAR	Door Light On	"Dor" + Temperature
TEMP OUT OF RANGE	"HI" or "LO" + Temperature	"HI" or "LO" + "AL" + Temperature
AC POWER FAILURE	"PF" + Temperature	A single dot will display

### Panic Alarm Operation: Two types of Panic Alarm are available:

- **Manual Panic Alarm** – *(Requires optional IP-1).* The alarm can be cleared by either pressing the Silence button on the 75LC or by opening and closing the door. *(This requires door contacts).*
- **Auto Panic Alarm** – *(Requires magnetic contacts, and either or both of the following IP-1 & MD -1).* Auto Panic offers protection for persons who may be hurt or disabled and cannot activate a Manual Panic Alarm.

## Using AutoPanic with an IP-1:

- If Autopanic is enabled, pressing the IP-1 at any time while the door is closed starts the **20 minute Auto Panic Timer**. When the Auto Panic timer runs out, the IP-1 starts to beep and blink for 40 seconds. Repeating IP-1 during a beep and blink resets the Auto Panic Timer for 20 minutes.

If not pressed, A Panic Alarm (**HLP**) automatically annunciates on the 75LC to let others know that someone may be injured or disabled inside the walk-in. Auto Panic Alarm is cleared in the same way as a Manual Panic Alarm.

## Using AutoPanic with an MD-1:

- The MD-1 makes Autopanic easier to use. Each time motion is detected, the MD-1 restarts the 20 minute Auto Panic Timer. If no motion is detected for 20 minutes the IP-1 (if present) starts to beep and blink for 40 seconds.

If no motion is detected a Panic Alarm (HLP) automatically annunciates on the 75LC to let others know that someone may be injured or disabled inside the walk-in. Auto Panic Alarm is cleared the same way as a Manual Panic Alarm.

## AC Power Failure Operation:

- **When power failure occurs:** The 75LC will alternate PF and the Monitored temperature for 1 minute as shown above under "Abnormal Condition".
- **For power failures under 1 minute:** Normal operation restores automatically and the incident is ignored.
- **For power failures beyond 1 minute:** The Alarm relay activates, and the horn will chirp intermittently with a blinking decimal point. Pressing Silence at any time during a power failure silences the horn for 1 minute, and briefly displays the monitored condition.

## ACCESSORIES:

Three accessories expand 75LC operation:

1. **IP-1 Illuminated Push Button**
2. **MD-1 Motion Detector**
3. **MC-1 Magnetic Contacts.**

These accessories are low voltage devices, connected directly to and powered by the 75LC. Accessories may be used individually or in combination. To help eliminate programming when common settings are desired, the 75LC comes equipped with **Autodetect**.

## What is Autodetect?

The **Autodetect** function in the 75LC senses if and when an accessory is connected to the 75LC and **automatically integrates the connected accessory into device operation**. No special programming is required. The 75LC ships with **Autodetect** enabled for the accessory inputs.

(Ex: If magnetic contacts **are not connected**, the 75LC operates as if there are no magnetic contacts. Once magnetic contacts **are connected**, **Autodetect** senses this and automatically provides door ajar alarm function and automatic lights on function when the door is open.) Accessories Information:

- **IP-1 Illuminated Push Button** – The **low voltage IP-1** mounts **inside** of the walk-in and provides both a **lights control switch** and a **panic alarm switch**. (*Press to control lights, press and hold for 2 seconds to activate Panic Alarm "HLP"*). A buzzer and lights built into the IP-1 provide warning to personnel in the walk-in that lights may turn off if the IP-1 isn't pressed.
- **MD-1 Motion Detector** – (*Not recommended for freezers*) The **low voltage MD-1** mounts **inside** of the walk-in and duplicates the light ON control function of the **IP-1** button when activated by movement of personnel inside of the walk-in.
- **MC-1 Magnetic Contacts** – Low voltage **magnetic contacts** sense door status and provide both a **door ajar alarm switch** and a **lights on switch** relative to the status of the door. One set of magnetic contacts come with each 75LC, various styles are available.

## OPERATION

**LIGHT CONTROL OPERATION:** The 75LC offers three ways to control lights:

1. **Regular timed lighting**
2. **Patented timed lighting with Auto Panic (default),**
3. **Untimed, manual on-off light control (replaces light switches.)**

**Password selectable presets** are used to easily change or select the desired mode of operation for your configuration (See pg. 6)

**NOTE:** The DOOR light blinks whenever lights are on.

1. **Regular Timed Lighting Operation** – When lights turn on, the lights-off timer is activated. Lights will turn off when the lights-off timer expires. Operation is as follows:
  - **Without Accessories:** Press the Lights Button on the 75LC to turn lights on and start lights-off timer. Press the Lights Button again to manually turn lights off before the lights-off timer expires.
  - **With IP-1 installed:** Press Lights Button or IP-1 to turn lights on and start lights off timer. Press Lights Button or IP-1 Switch again to manually turn lights off before the lights-off timer expires. The IP-1 blinks and beeps

for 40 seconds before lights-off timer expires to warn personnel that lights will be turning off. Pressing the IP-1 when it is blinking/beeping resets the lights-off timer and keeps lights on. If no action is taken the lights will turn off when lights-off timer expires.

- **With Magnetic Contacts installed:** Open the door to turn lights on. 75LC light button and installed IP-1 will turn lights on & off with door open. Once the door is closed the lights-off timer will begin.
- **With MD-1 motion detector installed:** (Coolers only) Activation of the MD-1 by movement of personnel inside the walk-in turns lights on. When personnel are no longer detected inside the walk-in the lights turn off. Any combination of accessories may be used. Accessories operate together as described individually.

## 2. Patented Timed Lighting with Auto Panic (Default) –

(Magnetic contacts required. IP-1 and/or MD-1 required in a cooler. IP-1 required in a freezer.) Operation is as follows:

When the door opens, Lights turn on. Press the **75LC light button or installed IP-1 to turn lights on & off while door is open**. When the Door is closed the Lights-off timer starts and the IP-1 starts to beep and blink to prompt a button press.

Pressing the IP-1 does the following:

1. Stops the lights-off timer and makes lights stay on **indefinitely for as long as the door remains closed**.
2. Starts a **built-in 20 minute Auto Panic timer**.
3. “Locks out” Light Switch on 75LC so that someone outside of walk-in can’t turn off lights while the box is occupied.
4. After 20 minutes, IP-1 starts to beep and blink again for 40 seconds to prompt a “check in” button press. Pressing the IP-1 resets and restarts Auto Panic timer. This repeats for as long as someone remains in the box with the door closed. If IP-1 isn’t pressed within 40 seconds, the 75LC **automatically generates a panic alarm**, “HLP” appears on the 75LC display to let personnel outside the box know that someone may be injured or disabled inside of the walk-in.

5. Opening and closing door resets all functions.

If no one is in the box to press the IP-1 after door is closed, lights turn off when lights-off timer expires.

**NOTE 1:** With both Magnetic contacts and IP-1 installed, IP-1 is a **Lights ON only** switch when the door is closed, and is a **Lights ON/OFF** switch when the door is open.

**NOTE 2:** With the door closed, the IP-1 blinks and beeps initially for 40 seconds and again for 40 seconds before the lights-off timer expires. Pressing the IP-1 at any time always activates the 20 minute Auto Panic timer.

**NOTE 3:** If door is closed and lights are off, the IP-1 always works as a “**lights on**” switch inside of the walk-in and always activates the 20 minute Auto Panic timer when pressed.

**NOTE 4:** In coolers, The MD-1 motion detector may be used instead of or in addition to the IP-1. MD-1 activation duplicates an IP-1 press and automates the process.

3. **Untimed Manual On-Off Light Control** – Replaces standard light switches. Operation is as follows:

- **Without accessories** – Press lights button on 75LC to turn lights on. Press again to turn lights off.
- **With IP-1 installed** – IP-1 is a “**lights ON/OFF**” switch inside of the walk-in. (Plus Manual Panic Alarm)
- **With Magnetic Contacts installed** – Lights turn on when the door is open. (Plus Door Ajar Alarm)
- **With MD-1 installed** – (Coolers only): Activation of MD-1 by movement of personnel in walk-in turns on lights.

Any combination of accessories may be used. Accessories operate together as described individually.

NOTE: Manual ON-OFF Light Control with Auto Panic is a password selectable option. (See table, pg. 6).

## ALARM OPERATION:

The 75LC has four modes of operation: **Sleep, Run, Test, and Program**.

**Sleep Mode:** The 75LC ships from the factory in Sleep Mode. (The rechargeable battery is connected physically but is not connected electrically until AC power is applied.)

To restore Sleep Mode if the alarm has been powered up:

1. Disconnect from AC power. Press and hold **Lights (Prog)** button for 3 seconds. Display reads “**con**” (confirm).
2. Press **Test (Up)**. Display reads “**bye**”, all functions shut off and the alarm goes into Sleep Mode. (Ready to ship.)
3. The battery automatically reconnects electrically the next time AC Power is applied.

**Run Mode:** All 75LC monitoring functions take place in Run Mode

Note the following:

1. You must press **Silence** to clear a Temp Alarm or a Power Failure alarm even if the condition has corrected itself! **This informs the operator if these alarm conditions happened, even if no one was present during the alarm.**
2. If door is being monitored, close the door to clear a door ajar alarm.
3. Open and close the door or press **Silence** to clear a Panic Alarm.

**Test Mode:** Press **Test** to perform simple test procedures and to view alarm parameter settings. The following occurs:

1. All visual indicators light. (LEDS)
2. Software version **rE** (revision) is displayed.
3. Program Menu parameters and settings are sequentially displayed. (See Parameter List below)
4. Horn sounds and alarm relay activates.
5. Pressing **Silence** at any time during the Test procedure restores Run Mode (normal operation)
6. Run Mode is automatically restored 10 seconds after Test is complete if **Silence** isn't pressed.

**Program Mode:** Use PAS-PRO™ password programming to select or customize a factory preset mode of operation (See pg. 6). The 10 available program parameters with symbols and ranges are:

## PARAMETER LIST

Password	PARAMETER	SYMBOL	RANGE
50	Scale	SCL	F or C
51	Probe Calibration (1)	Prb + CAL	-5 to +5
52	HI Alarm Temp Setpt	HI + ALr	-40F to 125F
53	LO Alarm Temp Setpt	LO + ALr	-40F to 125F
54	Temp Alarm Delay	Alr + dLy	0 to 150 Min.
55	Door Ajar Delay	dor + dLy	0 to 60 Min.
56	Ringback Delay (2)	rng + dLy	0 to 60 Min.
57	Lights Off Delay (3)	LtS + dLy	0 to 150 Min.
58	Lights Operation (4)	LtS + OPr	Aut or tL
59	Alarm Relay (5)	Alr + rLy	Unlatch (UnL) or Latch (LCH)

## PREVENTIVE MAINTENANCE REMINDER

(75LC) Programming Reminder to inspect coil and clean condenser.

To activate **clean condenser** feature.

\*\*Follow the four steps listed below to access the menu and scroll up to Password (70) to activate and password (80) to clear.

To activate **Inspect Coil** Feature.

\*\*Follow the four steps listed Below to access the menu and scroll up to Password (71) to activate and password (81) to clear.

1. While pressing and holding **Silence**, press Test . Display reads "???", then "0".
2. Press and hold **Test (Up)** to scroll to the desired operation password. **Silence (Down)** may be used to lower the number if you overshoot.
3. Press **Lights (Prog)**. Display reads "**Set**", then the password of the selected operation.
4. 75LC returns to Run Mode, operating in accordance with selected operation password.

\*\*\*\*Each number shown under menu option (70&71) will represent 1 week, if selected to annunciate it will sound to let the client know perform Inspection.

1. **Probe Calibration** – The 75LC comes pre-calibrated to read proper temperature with Automatic Scale Conversion from F to C. CAL parameter provides a means for offsetting the displayed temperature by +/-5 if so desired.  
(NOTE: CAL offset doesn't offset setpoints.)
2. **Ringback Delay** – Ringback provides a way to generate timed repeat audible alarms during an ongoing temperature alarm or power failure alarm condition. Select the time interval you wish for this to occur.
3. **Lights Off Delay**- The lights will turn off in the indicated number of minutes. If the Lights Off Delay is not to be used, increase the delay past 150 minutes and the time delay reads TOG for Toggle.
4. **Lights Operation** – "Aut" operation provides Timed Lighting with Auto panic (See pg. 3). "tL" operation provides regular timed lighting (See pg. 3).
5. **Alarm Relay** – Normally Open (N/O) and Normally Closed (N/C) dry contacts are provided. The two relay modes are:
  - a. **Unlatched (UnL)** – Default Setting. Relay activates when alarm occurs and deactivates when Silence is pressed. Typical Application: Controlling a remote buzzer or light.
  - b. **Latched (Lch)** – Relay activates when alarm occurs and deactivates when both alarm condition has cleared and Silence has been pressed. Typical Application: Connection to a building management system where relay remains activated until alarm condition clears and is acknowledged.

# PAS-PRO™ PASSWORD PROGRAMMING INSTRUCTIONS

**STEP ONE:** Use **Operation passwords** [20 → 29] to choose desired light control operation in either °F or °C scale. (Default Password is "20")

**STEP TWO:** If desired, use **Parameter passwords** [50 → 59] to customize your selected operation.

## Using PAS-PRO™ To select an OPERATION PASSWORD [20 → 29]:

1. While pressing and holding **Silence**, press **Test**. Display reads "???", then **"0"**.
2. Press and hold **Test (Up)** to scroll to the desired operation password. **Silence (Down)** may be used to lower the number if you overshoot.
3. Press **Lights (Prog)**. Display reads **"Set"**, then the password of the selected operation.
4. 75LC returns to Run Mode, operating in accordance with selected operation password.

## Using PAS-PRO™ To select a parameter password [50 → 59]:

(See passwords and corresponding program menu parameters in tables above and on previous page.)

**NOTE:** Parameter passwords "50" thru "59" are "entry points" into the programming menu. The programming menu is an "endless loop" and the entire menu can be accessed from any entry point.

1. While pressing and holding **Silence**, press **Test**. Display reads "???", then **"0"**.
2. Press **Test (Up)** to scroll to the password for the desired parameter you wish to change. **Silence (Down)** may be used to lower the number if you overshoot.
3. Press **Lights (Prog)**. Display reads **"Prg"**, then the selected parameter symbol, then the present parameter setting. (Example: HI SETPT SYMBOL = **"HI"** + **"ALr"**, default setting = **"42°"**).
4. Use the **Test (Up)** switch or the **Silence (Down)** to change parameter setting if necessary.
5. Once the desired parameter setting is selected, momentarily press **Lights (Prog)** to advance to the next parameter and continue in the same manner for each setting you wish to change.
6. **Exit from Program Mode occurs automatically if no buttons are pressed for 5 seconds.** (Display reads **"Set"**, 75LC returns to Run Mode, operating in accordance with new settings.) To manually exit, **HOLD Lights (Prog) Switch for 2 seconds until Display reads "Set"**. (75LC returns to run mode, operating in accordance with new settings.) It is not necessary to complete the menu to change selected parameters. **ANY CHANGES MADE PRIOR TO EXITING WILL BE STORED AS NEW OPERATING PARAMETERS!** If desired, once programming is complete, press **"TEST"** switch to verify new parameter settings.

LIGHT OPERATION			OPERATION PASSWORDS, IN FAHRENHEIT				
			WITH AUTOPANIC		WITHOUT AUTOPANIC		
PASSWORDS			(DEFAULT) COMPLIANT 15 MIN. TIMED LIGHTING WITH AUTOPANIC	ON-OFF LIGHT SWITCH, NO TIMED LIGHTING WITH AUTOPANIC	COMPLIANT 15 MIN. TIMED LIGHTING WITHOUT AUTOPANIC	NON-COMPLIANT 150 MIN. TIMED LIGHTING WITHOUT AUTOPANIC	ON-OFF LIGHT SWITCH, WITHOUT AUTOPANIC
			20	21	22	23	24
50	SCALE	SCL	F	F	F	F	F
51	CALIBRATION (box 1&2)	Prb + CAL	0	0	0	0	0
52	HI SETPOINT (box 1&2)	HI + ALr	COOLER 42 (FRZR 10)	COOLER 42 (FRZR 10)	COOLER 42 (FRZR 10)	COOLER 42 (FRZR 10)	COOLER 42 (FRZR 10)
53	LO SETPOINT (box 1&2)	LO + ALr	COOLER 30 (FRZR -20)	COOLER 30 (FRZR -20)	COOLER 30 (FRZR -20)	COOLER 30 (FRZR -20)	COOLER 30 (FRZR -20)
54	TEMP ALARM DELAY (box 1&2)	Alr + dLy	60 (MIN.)	60 (MIN.)	60 (MIN.)	60 (MIN.)	60 (MIN.)
55	DOOR AJAR DELAY (box 1&2)	dor + dLy	20 (MIN.)	20 (MIN.)	20 (MIN.)	20 (MIN.)	20 (MIN.)
56	RINGBACK DELAY	rnG + dLy	0 (No Ringback)	0 (No Ringback)	0 (No Ringback)	0 (No Ringback)	0 (No Ringback)
57	LIGHTS OFF DELAY (box 1&2)	Lts + dLy	14 (MIN.)	Infinite (tOG)	14 (MIN.)	150 (MIN.)	Infinite (tOG)
58	LIGHTS OPERATION MODE	Lts +OPr	Aut	Aut	tL	tL	tL
59	ALARM RELAY MODE	Alr + rLv	UnL (Unlatched)	UnL (Unlatched)	UnL (Unlatched)	UnL (Unlatched)	UnL (Unlatched)
70	CLEAN CONDENSER	Cln +Con	To clear use password 80				
71	INSPECT COIL	Ins +Col	To clear use password 81				
	AUTOSET ENABLED?		YES	YES	YES	YES	YES
	AUTODETECT ENABLED?		YES	YES	YES	YES	YES

LIGHT OPERATION			OPERATION PASSWORDS, IN CENTIGRADE				
			WITH AUTOPANIC		WITHOUT AUTOPANIC		
PASSWORDS			(DEFAULT) COMPLIANT 15 MIN. TIMED LIGHTING WITH AUTOPANIC	ON-OFF LIGHT SWITCH, NO TIMED LIGHTING WITH AUTOPANIC	COMPLIANT 15 MIN. TIMED LIGHTING WITHOUT AUTOPANIC	NON-COMPLIANT 150 MIN. TIMED LIGHTING WITHOUT AUTOPANIC	ON-OFF LIGHT SWITCH, WITHOUT AUTOPANIC
			25	26	27	28	29
50	SCALE	SCL	C	C	C	C	C
51	CALIBRATION (box 1&2)	Prb + CAL	0	0	0	0	0
52	HI SETPOINT (box 1&2)	HI + ALr	COOLER 6 (FRZR -12)	COOLER 6 (FRZR -12)	COOLER 6 (FRZR -12)	COOLER 6 (FRZR -12)	COOLER 6 (FRZR -12)
53	LO SETPOINT (box 1&2)	LO + ALr	COOLER -1 (FRZR -29)	COOLER -1 (FRZR -29)	COOLER -1 (FRZR -29)	COOLER -1 (FRZR -29)	COOLER -1 (FRZR -29)
54	TEMP ALARM DELAY (box 1&2)	Alr + dLy	60 (MIN.)	60 (MIN.)	60 (MIN.)	60 (MIN.)	60 (MIN.)
55	DOOR AJAR DELAY (box 1&2)	dor + dLy	20 (MIN.)	20 (MIN.)	20 (MIN.)	20 (MIN.)	20 (MIN.)
56	RINGBACK DELAY	rnG + dLy	0 (No Ringback)	0 (No Ringback)	0 (No Ringback)	0 (No Ringback)	0 (No Ringback)
57	LIGHTS OFF DELAY (box 1&2)	Lts + dLy	14 (MIN.)	Infinite (tOG)	14 (MIN.)	150 (MIN.)	Infinite (tOG)
58	LIGHTS OPERATION MODE	Lts +OPr	Aut	Aut	tL	tL	tL
59	ALARM RELAY MODE	Alr + rLv	UnL (Unlatched)	UnL (Unlatched)	UnL (Unlatched)	UnL (Unlatched)	UnL (Unlatched)
70	CLEAN CONDENSER	Cln +Con	To clear use password 80				
71	INSPECT COIL	Ins +Col	To clear use password 81				
	AUTOSET ENABLED?		YES	YES	YES	YES	YES
	AUTODETECT ENABLED?		YES	YES	YES	YES	YES

# INSTALLATION

## GENERAL SAFETY MEASURES AND PRODUCT LIMITATIONS

- This product ("Product") must be installed by a licensed electrician experienced in working in the types of environments for which this Product is intended to be utilized; specifically, commercial walk-in coolers and freezers ("Equipment").
- Personnel installing the Product must carefully and completely read the Operating and Installation Instructions ("Instructions"), and instructions and specifications of the Equipment manufacturers, before attempting to operate and install the Product. Failure to comply with the Instructions, and the instructions and specifications of the Equipment manufacturers, may result in personal injury and/or property damage and may void the warranty of the Product. Retain the Instructions for future reference.
- The Product shall only be used for the purposes described in the Instructions.
- During installation of the Product, all applicable laws, regulations and industry rules, including local electrical and safety codes, the National Electric Code (NEC) and the Occupational Safety and Health Act (OSHA), must be strictly followed. Consistent therewith, follow applicable electrical codes regarding running of low voltage wiring and high voltage wiring in separate conduits and use appropriately rated wire (insulation type, voltage rating and wire gauge) for all connections. Supply connection wiring must be rated at least 90°C. Use copper conductors only.
- The enclosure used for mounting the Product must be properly grounded according to electrical code.
- Confirm that the power source conforms to the requirements of the Product before connecting.
- Do not exceed the rated limits of the Product. Refer to the Product specifications for suitability of the Product to the application.
- The Product is not suitable for use in wet locations. Do not expose the Product to water, moisture or condensation. In no event should the Product be exposed to environments where sudden temperature changes with high humidity may result in the formation of condensation.
- **Any openings in the walls, ceiling or floor of the Equipment for wiring or other reason must be sealed (made airtight and watertight) with appropriate materials (e.g., silicone, caulk or foam), both on the outside and inside of the Equipment, to prevent moisture or condensation from entering the compartment of the Equipment and forming and accumulating on the interior walls of the compartment and the contents of the compartment, including the Product. Failure to properly seal such openings may (i) result in damage to the Equipment and contents of the compartment (ii) pose a safety hazard and (iii) void the warranty of the Product.**
- **To prevent moisture or condensation from entering or forming in the enclosure used for the Product, any openings in this enclosure (for wiring access or other purpose) must be appropriately sealed with materials such as silicone, caulk or foam.**
- Installation of the Product should be inspected and the Product tested by qualified personnel to ensure the Product performs safely and in accordance with the Product specifications. Periodic testing of the Product should be performed on an ongoing basis (at least quarterly) to ensure the Product continues to perform properly.
- All personnel operating, maintaining, repairing or interfacing with the Product must be instructed in the use of the Product and provided with the Instructions. The Instructions must be kept in an accessible location for easy reference.
- **WARNING:** Hazard of electric shock! Power sources must be turned off or otherwise disconnected prior to installation or servicing of the Product. Lock and tag power disconnects to prevent an unexpected application of power.

## Mounting the enclosure for the 75LC:

Any enclosure used for 75LC mounting must provide multiple wire access hubs for running line voltage wiring and low voltage wiring in separate conduits. Determine the wire access hubs to be utilized for the installation and plug and seal any remaining unused openings with hardware and/or sealant. The 75LC will fit into a typical outdoor, single gang outlet box.

**Surface Mount** – A typical outdoor, single gang outlet box may be used for surface mounting. Mount the enclosure vertically onto the desired surface. If fastening the enclosure with screws directly through the back wall of the enclosure, use two screws, centered vertically above and below the opening in the rear of the enclosure.

**Flush Mount** – (See flush mount cutout template, pg 9). Make the cutout and the mounting holes into the compartment door frame or compartment wall as shown on the cutout template. Once the cutout and mounting holes have been made, screws in the mounting holes may be used to hold the selected enclosure in place during the foaming process.

## Mounting the IP-1:

The IP-1 may be flush mounted into a standard J-Box. A typical outdoor type single gang outlet box may be used for surface mounting. (**NOTE:** The IP-1 is a low voltage device. Wiring to the IP-1 must not be installed in the same conduit as line voltage wiring. An 8' length of color coded wiring for connecting the IP-1 is provided.) Typical mounting location for the IP-1 is inside of the walk-in adjacent to the door. Any wire pathways or other openings leading into the enclosure for the IP-1 from outside of the walk-in must be sealed both on the outside and on the inside of the walk-in to prevent a pathway for condensation.

## Mounting the MD-1:

**(Install in Coolers only).** The MD-1 may be flush mounted into a standard J-Box. A typical outdoor type single gang outlet box may be used for surface mounting. (**NOTE:** The MD-1 is a low voltage device. Wiring to the MD-1 must not be installed in the same conduit as line voltage wiring. A 6' length of color coded installation wiring is pre-connected to the MD-1). Typical mounting location for the MD-1 is inside of the walk-in above the door. There is no need to open or access the motion detector itself. Mount the MD-1 horizontally with the white oval lens facing down. The red light inside of the MD-1 will illuminate whenever the MD-1 is activated.

**WIRING: See Wiring Diagrams, page 13.** Keep wiring relatively short inside of the enclosure for the 75LC. **Make sure that wiring openings into all enclosures are sealed properly to prevent a pathway for condensation.**

## Line Voltage Wiring:

The line voltage terminal block will accept up to 12AWG wire. Wire the 3 line voltage connections in accordance with the accompanying **75LC Connections** diagram. Connections are also marked on the 75LC. The stripped end of the line voltage wire connections should be kept short, approximately ¼" long. Insert the wire ends into the appropriate terminal block openings and **tighten the screws** securely to clamp the wires into place. **With stranded wire, make sure that all strands are captured in the terminal block openings.** Tug on wire to make sure connections are secure. **MAKE SURE THE SCREWS ARE TIGHT!** Supply connection wiring must be rated at least 90°C. Use copper conductors only. **Make sure that the green wire from the 75LC faceplate is properly grounded. If a metal enclosure is used for mounting the 75LC, make sure that the enclosure is also properly grounded.**

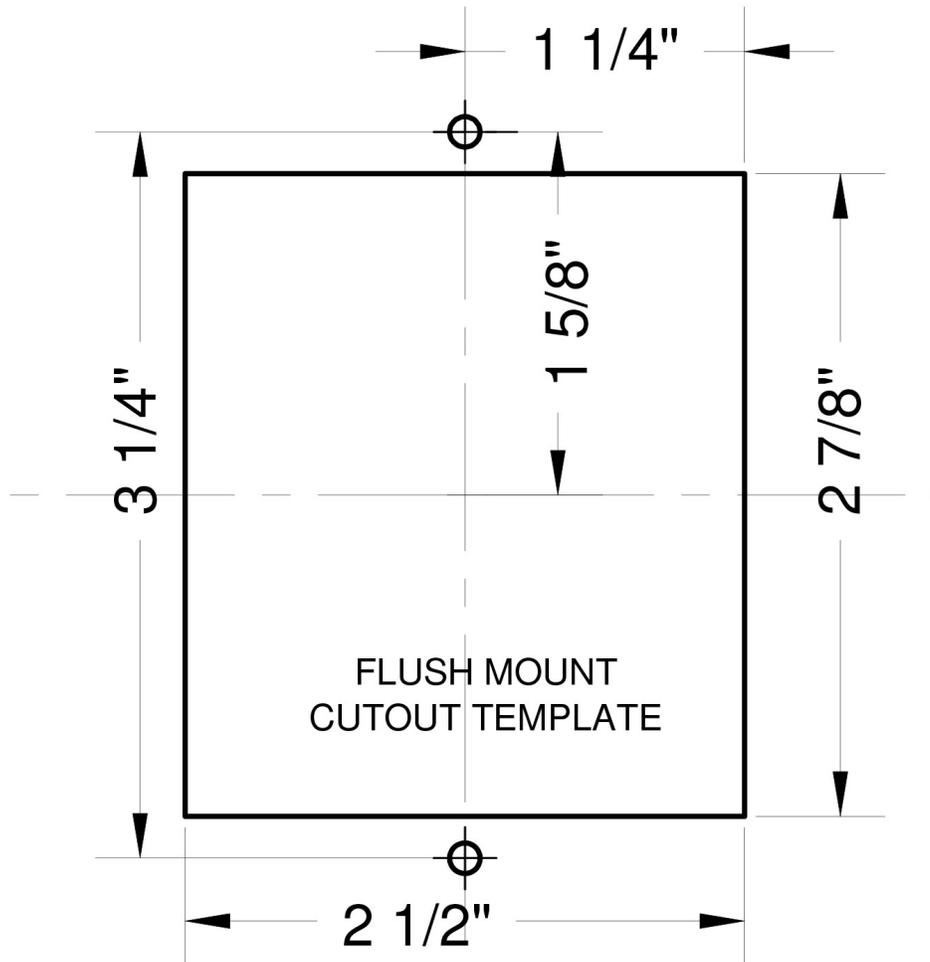
## Low Voltage Wiring:

The low voltage terminal blocks will accept wire from 24-16AWG. Accessories and sensors are typically provided with 24-22AWG wire. General Accessories and sensor connections are shown on the accompanying **75LC Connections** diagram. Connections are also marked on the 75LC. See the diagrams labeled "**IP-1 Connections**", "**MD-1 Connections**", and "**IP-1 & MD-1 Connections**" for wiring specific to your application. The stripped end of the low voltage wire connections should be kept short, approximately ¼" long. To connect wires, press down on the respective plunger on the top of the terminal block, insert the wire into the respective hole and release the plunger. Tug on wires to make sure connections are secure and that they are grabbing bare wire and not insulation. (**NOTE:** If the IP-1 and the MD-1 are both being used, use the enclosure for the IP-1 as a junction box for connecting the MD-1 in accordance with the "**IP-1 & MD-1 Connections**" diagram. Connect the green wires together in the IP-1 enclosure with a wire nut or other connector. Strip the 2 black wires approximately 3/8", twist together and insert both into the IP-1 block in accordance with the diagram. Do the same with the two red wires. Again, tug gently on all wires to make sure connections are secure.)

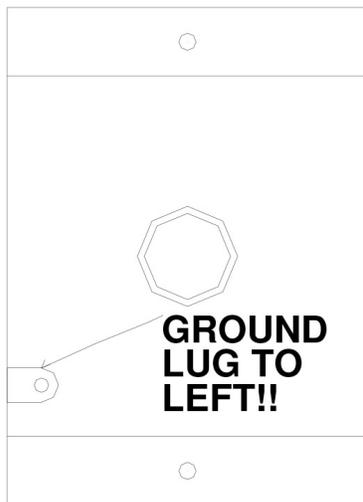
## Temperature Probe Mounting:

Run the probe into the monitored compartment and locate the sensor in a spot which will typify the average ambient temperature. Recommended location is in the center of the ceiling. Fasten the sensor with the provided clamp. Make sure sensor and sensor wire are positioned and/or

## FLUSH MOUNT CUTOUT TEMPLATE



## 75LC ENCLOSURE POSITION IMPORTANT!!



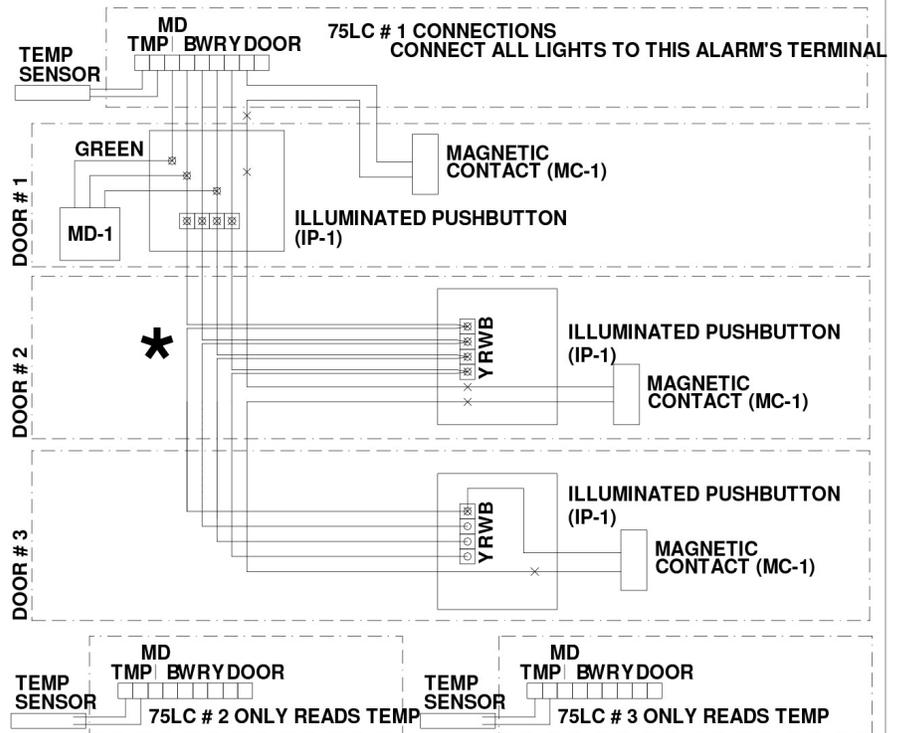
**MOUNT THE 75LC  
ENCLOSURE WITH THE  
GROUND LUG TO THE LEFT  
SO THAT THE BATTERY  
DOES NOT CONTACT THE  
GROUND LUG WHEN THE  
ALARM IS INSTALLED**

**CONNECT THE GROUND WIRE  
TO GROUND LUG BEFORE  
INSERTING 75LC**

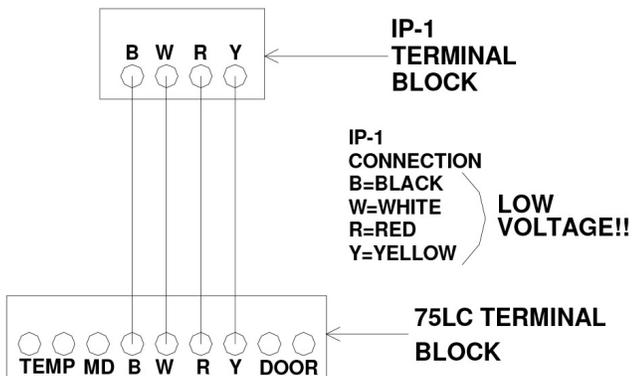
## WIRING DIAGRAM - 75LC WITH MULTIPLE IP-1'S & MAGNETIC CONTACTS. MOTION DETECTOR (MD-1) ALSO SHOWN

FUNCTION: TO PROVIDE 3 AND 4 WAY  
LIGHT SWITCHING INSIDE  
OF COMPARTMENT, DOOR AJAR,  
AND AUTOMATIC "LIGHTS-ON" AT  
EACH DOOR.

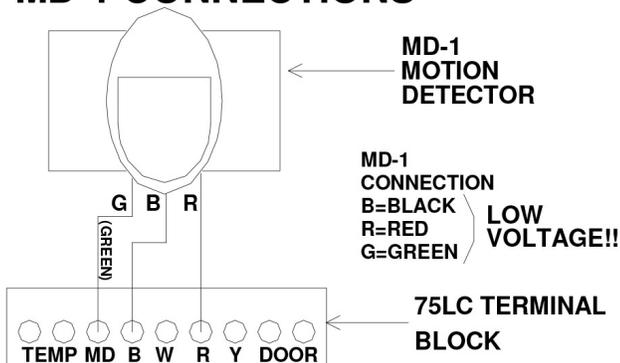
\*NOTE: ALL CONNECTIONS SHOWN ARE LOW  
VOLTAGE USING RECOMMENDED INTER-CONNECT  
WIRE: [22AWG, MULTI-CONDUCTOR, STRANDED]  
PROVIDE SEPARATE CONDUIT FOR LOW VOLTAGE WIRING.  
MC-1 CONTACTS CAN CONNECT INSIDE IP-1



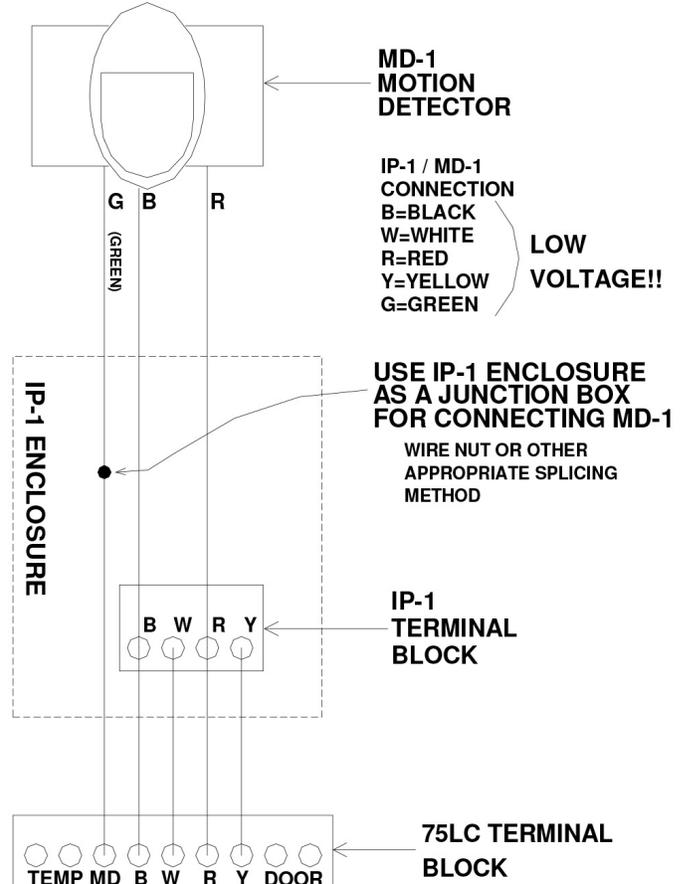
### IP-1 CONNECTIONS



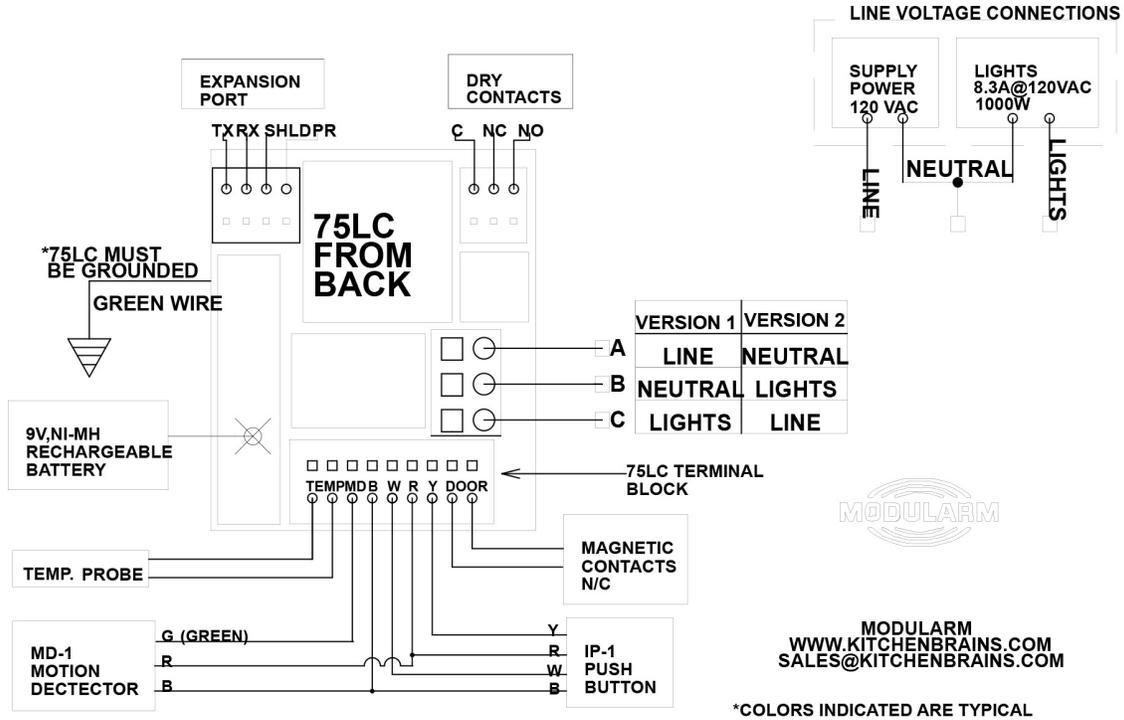
### MD-1 CONNECTIONS



### IP-1 & MD-1 CONNECTIONS



# MODULARM 75LC WIRING DIAGRAM



## TROUBLESHOOTING GUIDE

MESSAGE DISPLAYED	POSSIBLE CAUSE	CORRECTIVE ACTION
<b>HI + ## + (AL)</b>	Temperature above HIGH set point for less time than alarm delay (AL indicates longer than time delay)	Wait for defrost cycle to end Check HIGH set point ( & alarm delay) Possibly adjust setting Check location of temp probe Relocate if necessary
<b>Lo + ## + (AL)</b>	Temperature below LOW set point for less time than alarm delay (AL indicates longer than time delay)	Check location of temp probe Check LOW set point ( & alarm delay) & possibly adjust setting Relocate if necessary
<b>LO+OPN</b>	Open circuit or out of range value on temp probe	Ensure proper electrical connection of temp probe. Ensure proper sensing bulb. Inspect run of wire
<b>HI+ SHR</b>	Short circuit or out of range value on temp probe	Ensure proper electrical connection of temp probe Ensure proper sensing bulb. Inspect run of wire
<b>HI+ SHR LO+OPN</b>	Door sensor & temp probe are reversed	Door sensor & temp probe are reversed
<b>OCC</b>	Occupancy sensor is giving error	Check connection to Motion Detector and Motion detector device
<b>PF</b>	Line voltage is not detected	Check Line voltage. Check for signs of physical damage
<b>HLP (cannot silence)</b>	Fault from IP-1	Inspect wire connection points [B W R Y] on 75LC and IP-1
<b>ERR + ##</b>	Fault from I-BOARD or 75LC WIRELESS	Inspect wire connection points on 75LC [TX RX SHLD PR] and Crossover device (I-BOARD or 75LC WIRELESS)
<b>DOR (cannot silence)</b>	Fault on door contact	Inspect wire connection points and physical contact alignment
<b>Rapidly changing temperature</b>	Empty compartment, Poor sensor location, Wrong sensor	Fill compartment Relocate sensor Call for assistance in identification

### SPECIFICATIONS- 75LC

#### DIMENSIONS

4.5"L x 2.75"W x 2.0"D (Dimensions include outdoor type single gang outlet box.)

#### POWER SUPPLY

120VAC +/- 10%

#### POWER CONSUMPTION

3.6VA Max (30mA)

#### ALARM RELAY

N/O & N/C Dry contacts, 1A @ 28VDC

#### LIGHT RELAY

8.3A @ 120VAC, 1000W tungsten

#### AMBIENT TEMP

0-40°C

#### HUMIDITY

90% noncondensing

#### MEASUREMENT TEMPERATURE RANGE

-40°F to 125°F (-40°C to 52°C)

#### TEMPERATURE SENSOR

Standard 25' sensor. (Other lengths available.)

#### RESOLUTION

1°F or °C

#### ACCURACY

+/- 1°F from -25°F to 70°F (-32°C to 21°C), +/-2°F full range

#### MOUNTING

Outdoor, single gang outlet box\*

\*Alternate enclosure for mounting must be UL listed enclosure, providing multiple wire access hubs for running line and low voltage.



certifications apply to 75LC only

### SPECIFICATIONS- IP-1

#### DIMENSIONS

4.5"L x 2.75"W x 2.0"D (Dimensions include outdoor type single gang outlet box.)

#### POWER SUPPLY

6V DC from 75LC

#### AMBIENT TEMP

-40-40°C

#### HUMIDITY

90% noncondensing

#### MOUNTING

Outdoor, single gang outlet box\*

\*Alternate enclosure for mounting must be UL listed enclosure, providing multiple wire access hubs for running low voltage.

### SPECIFICATIONS- MD-1

#### DIMENSIONS

3.125"L x 4.5"W x 3.5"D (Dimensions include outdoor type single gang outlet box.)

#### POWER SUPPLY

6V DC from 75LC

#### OPERATING TEMPERATURE

-10°C -50°C (14°F to 122°F)

#### MAX COVERAGE

12x12m (40x40ft) / 90°

#### MOUNTING HEIGHT

1.8m - 2.4m (6 - 8ft)

#### HUMIDITY

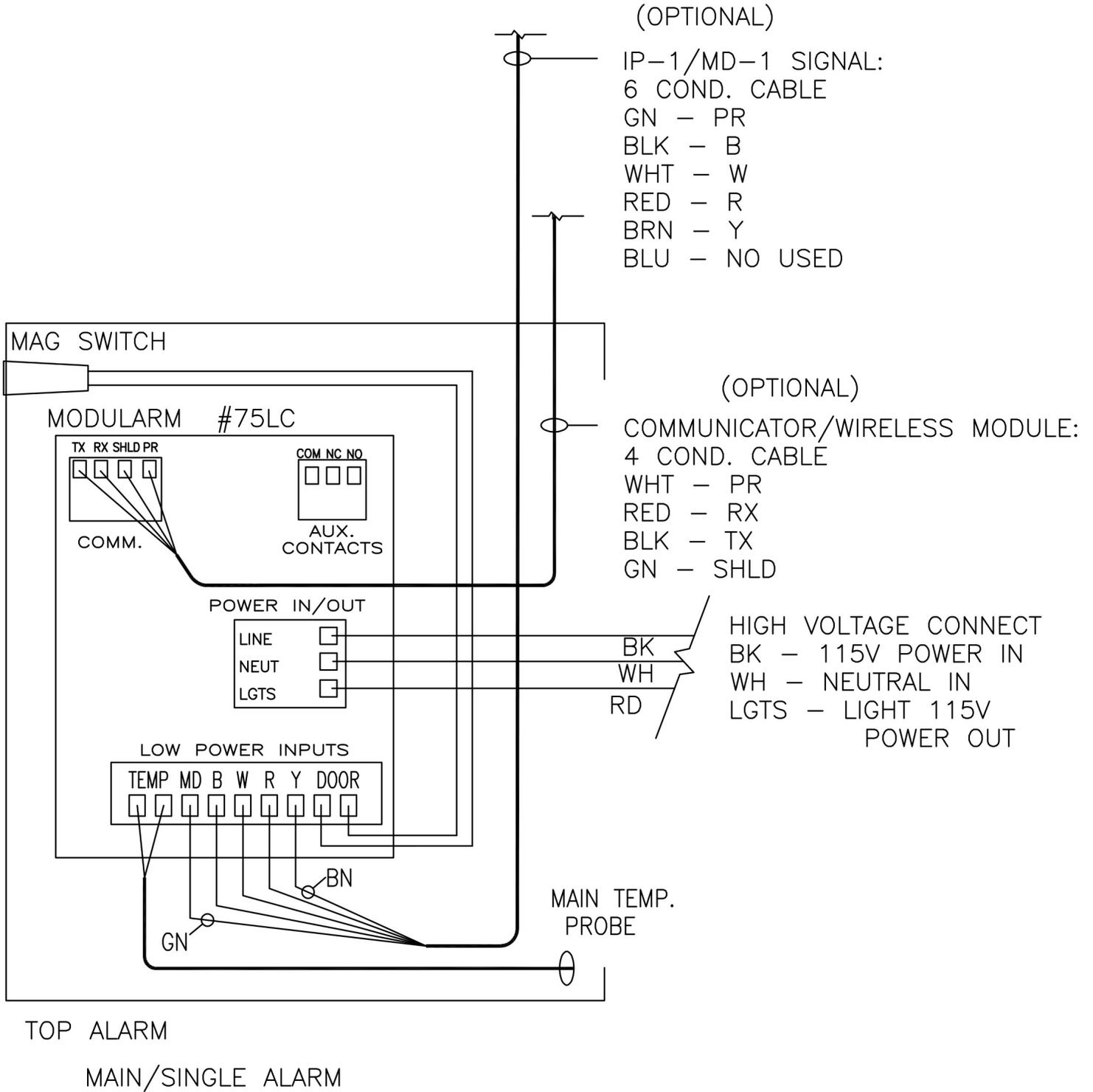
90% noncondensing

#### MOUNTING

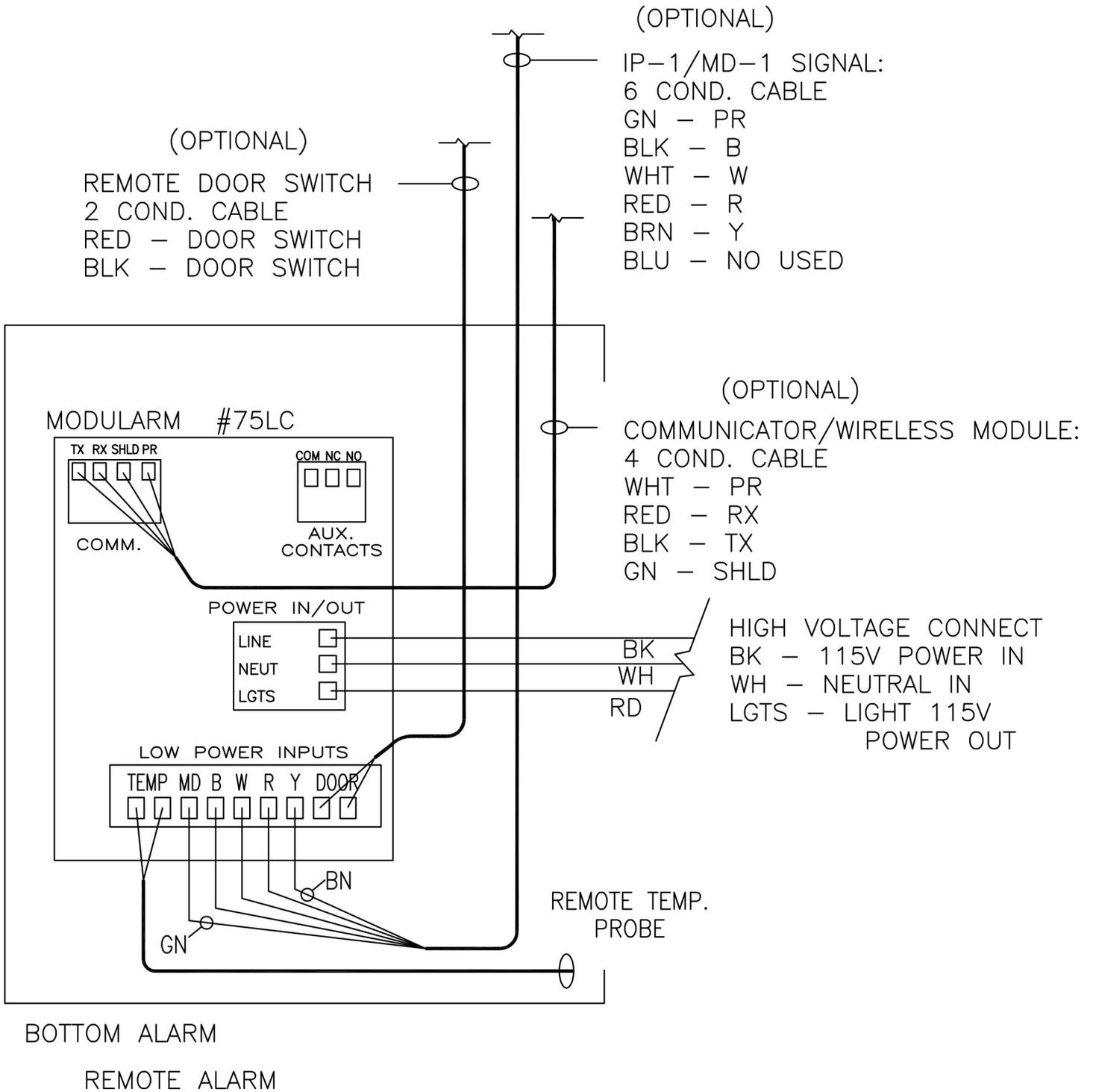
Outdoor, single gang outlet box\*

\*Alternate enclosure for mounting must be UL listed enclosure, providing multiple wire access hubs for running low voltage.

# ALARM WIRING 1



# ALARM WIRING 2



# ALARM WIRING 3

DOOR SWITCHES  
MUST BE WIRED  
IN SERIES

(OPTIONAL)

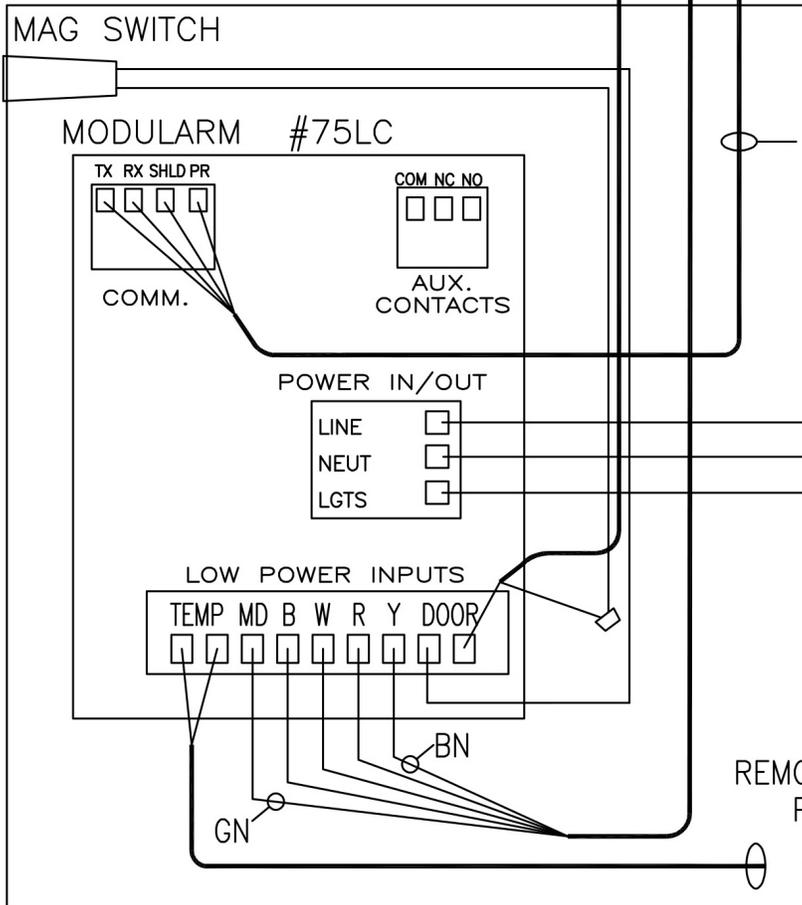
REMOTE DOOR SWITCH  
2 COND. CABLE  
RED - DOOR SWITCH  
BLK - DOOR SWITCH

(OPTIONAL)

IP-1/MD-1 SIGNAL:  
6 COND. CABLE  
GN - PR  
BLK - B  
WHT - W  
RED - R  
BRN - Y  
BLU - NO USED

(OPTIONAL)

COMMUNICATOR/WIRELESS MODULE:  
4 COND. CABLE  
WHT - PR  
RED - RX  
BLK - TX  
GN - SHLD



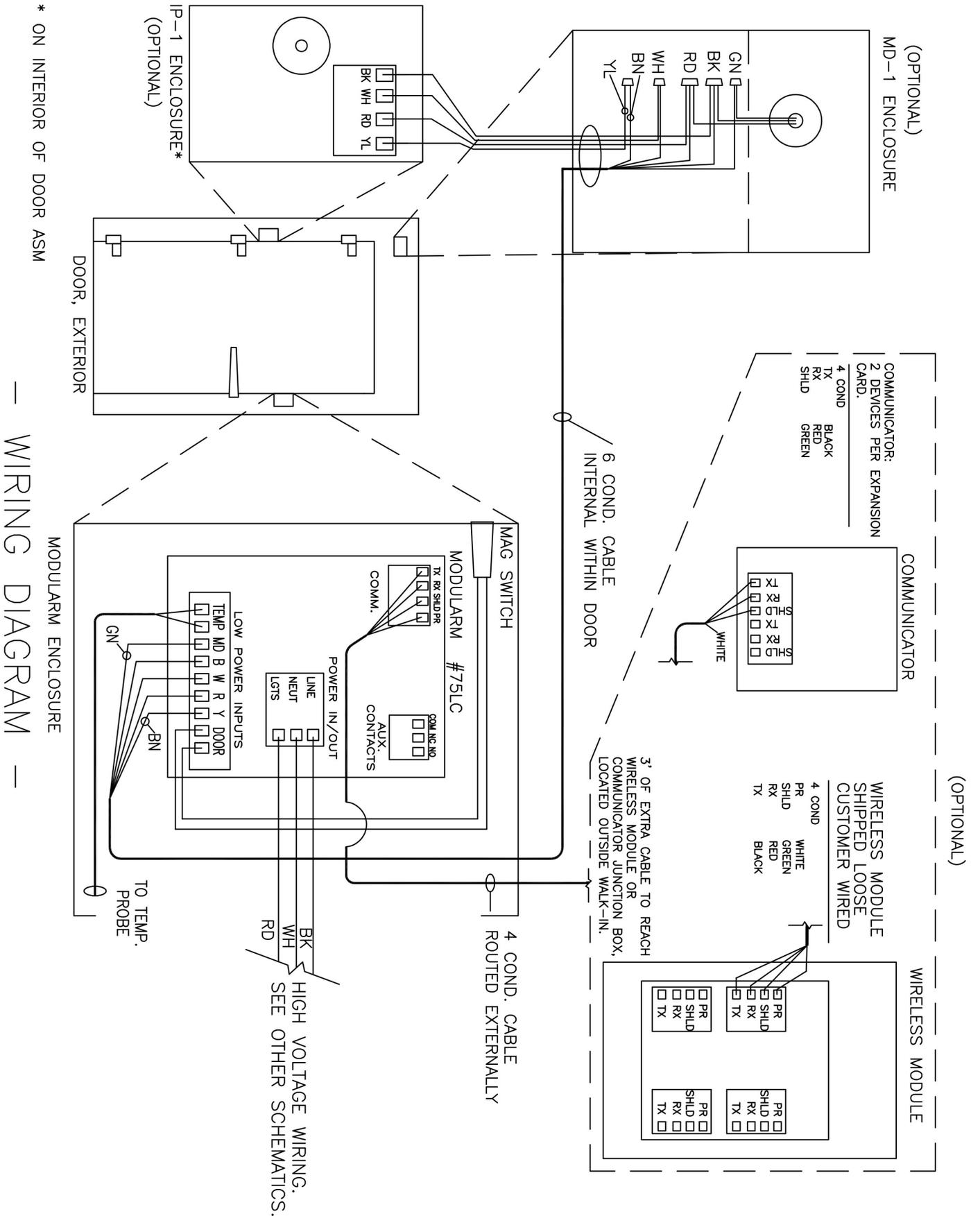
HIGH VOLTAGE CONNECT  
BK - 115V POWER IN  
WH - NEUTRAL IN  
LGTS - LIGHT 115V  
POWER OUT

TOP ALARM

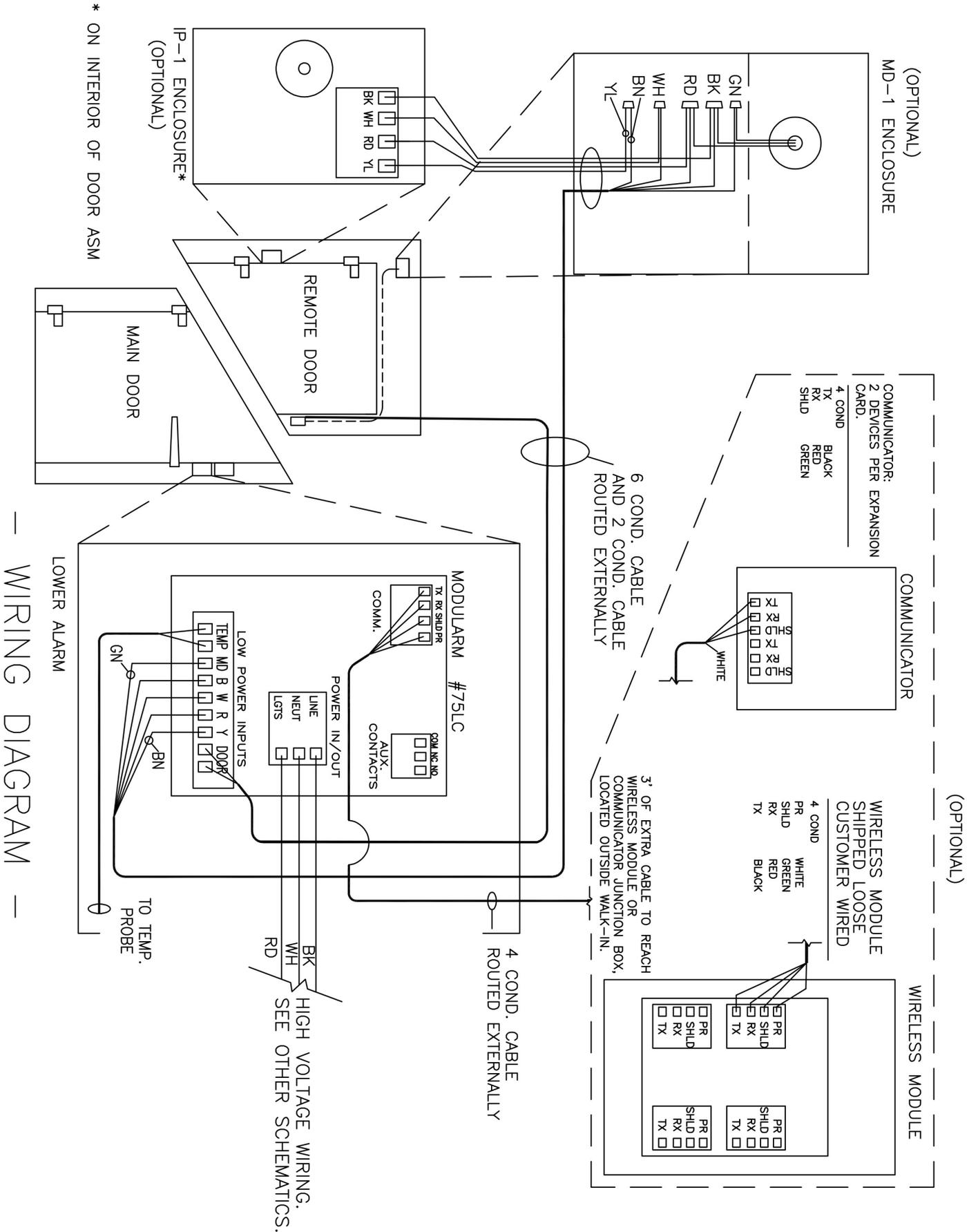
MAIN/SINGLE ALARM

MULTIPLE DOORS  
CONTROLLING  
ONE ALARM

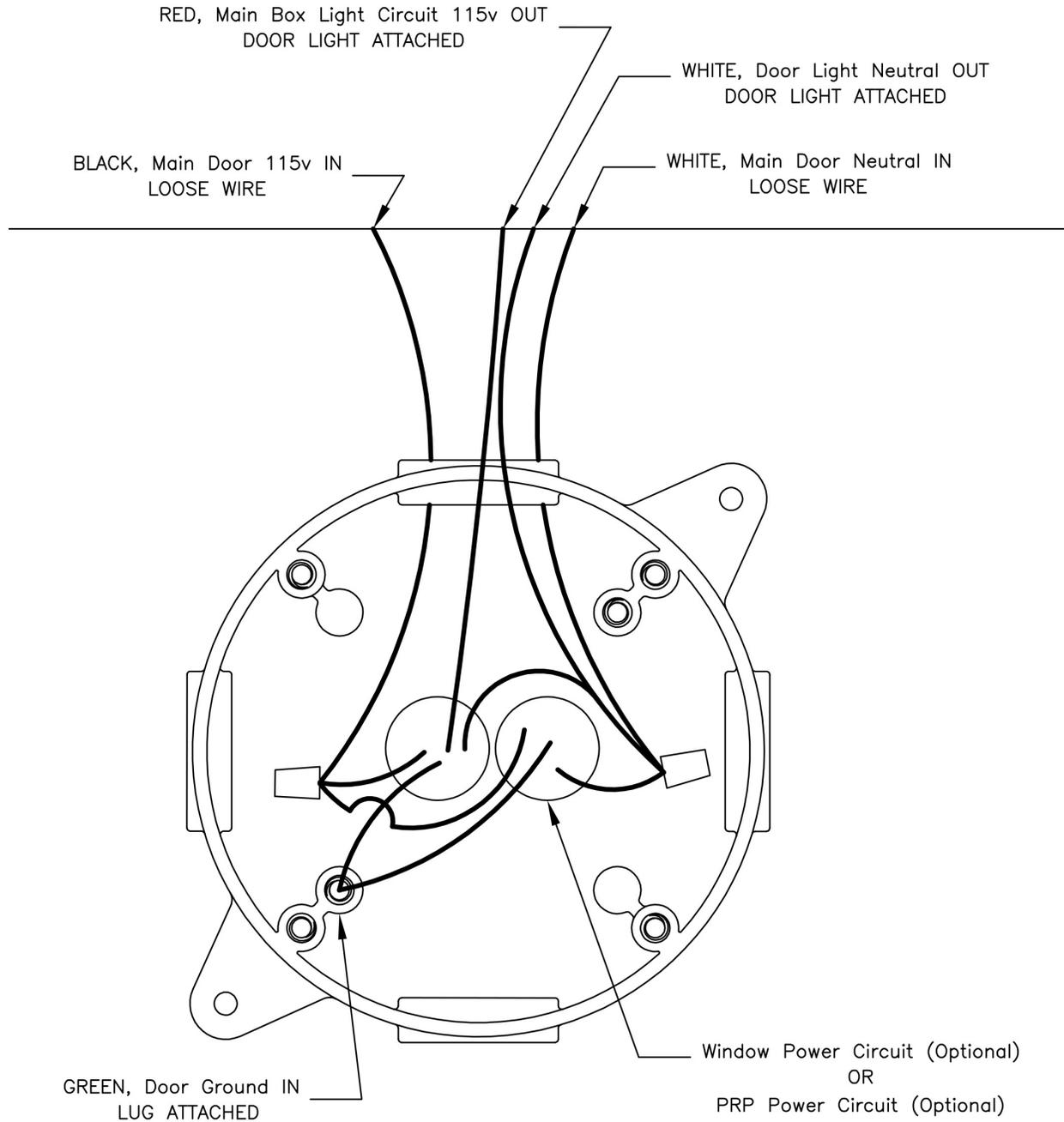
# COMPONENT WIRING 2



# COMPONENT WIRING 1



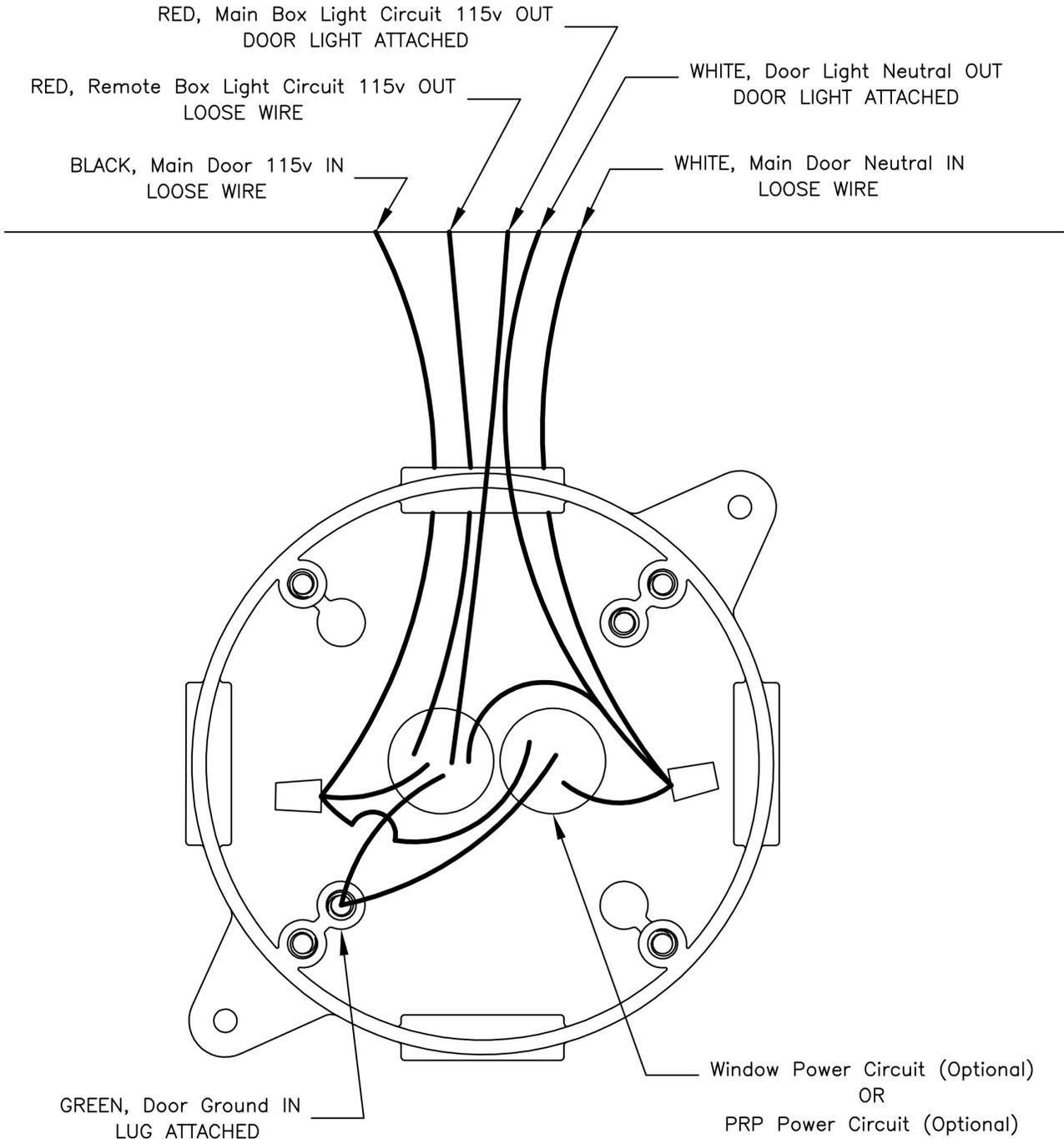
# HIGH VOLTAGE SINGLE



Alarm Door w/ Single Alarms  
High Voltage Wiring  
Internal Light Junction Box

— WIRING DIAGRAM —

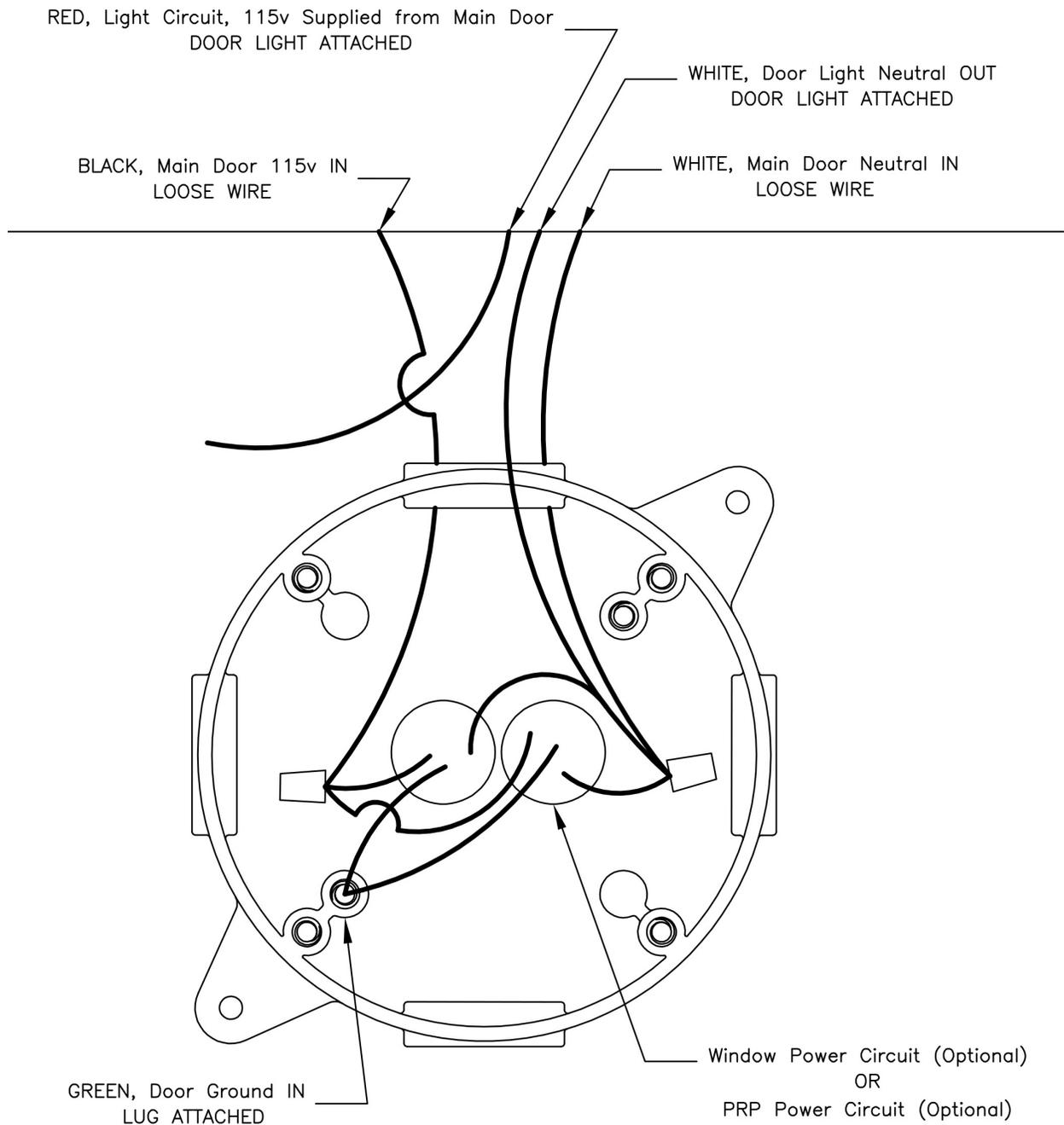
# HIGH VOLTAGE MULTI



Alarm Door w/ Multiple Alarms  
High Voltage Wiring  
Internal Light Junction Box

— WIRING DIAGRAM —

# HIGH VOLTAGE REMOTE

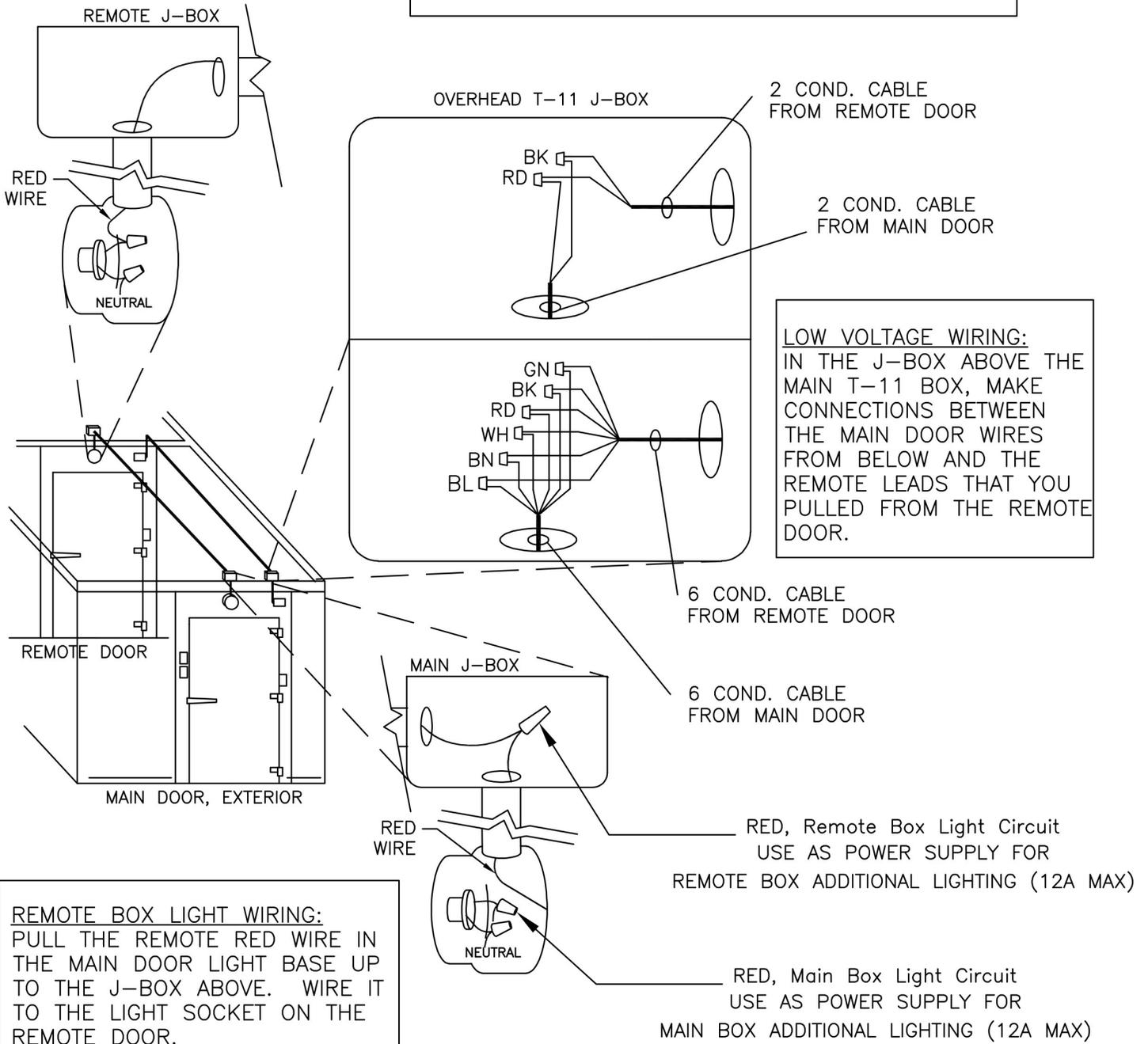


Remote Door w/ No Alarms  
High Voltage Wiring  
Internal Light Junction Box

— WIRING DIAGRAM —

# OVERHEAD WIRING

PULL THE ALL CABLE FROM THE REMOTE DOOR TO HIGH VOLATAGE J-BOX AND LOW VOLTAGE J-BOX INSTALLED ABOVE THE MAIN DOOR. CAULK ALL PENETRATIONS THROUGH THE CEILING PANELS INSIDE AND OUTSIDE THE CONDUIT.



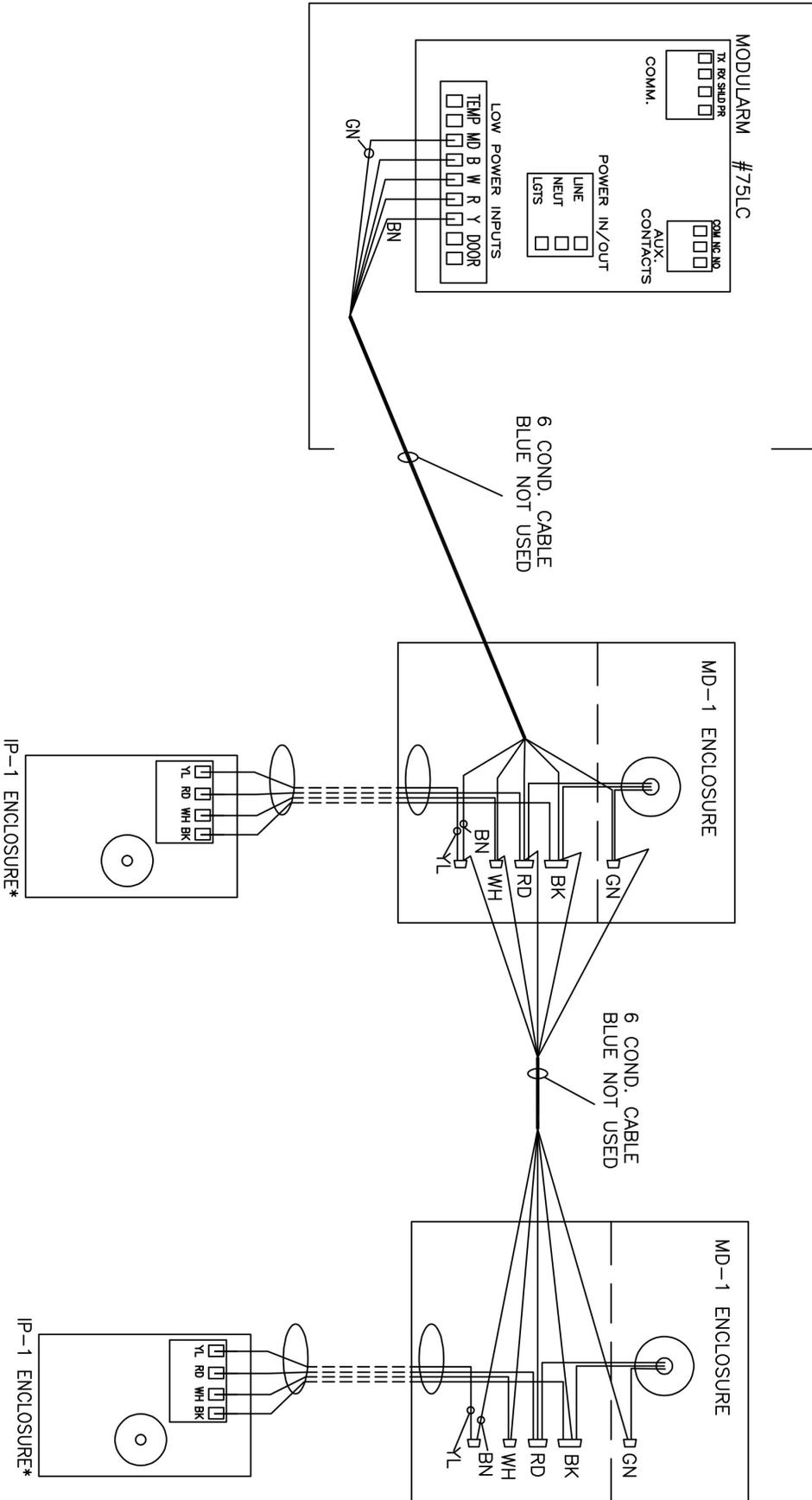
LOW VOLTAGE WIRING:  
IN THE J-BOX ABOVE THE MAIN T-11 BOX, MAKE CONNECTIONS BETWEEN THE MAIN DOOR WIRES FROM BELOW AND THE REMOTE LEADS THAT YOU PULLED FROM THE REMOTE DOOR.

REMOTE BOX LIGHT WIRING:  
PULL THE REMOTE RED WIRE IN THE MAIN DOOR LIGHT BASE UP TO THE J-BOX ABOVE. WIRE IT TO THE LIGHT SOCKET ON THE REMOTE DOOR.

4 COND. CABLE  
ROUTED SEPARATELY  
TO REMOTE LOCATION

# MULTI COMPONENT

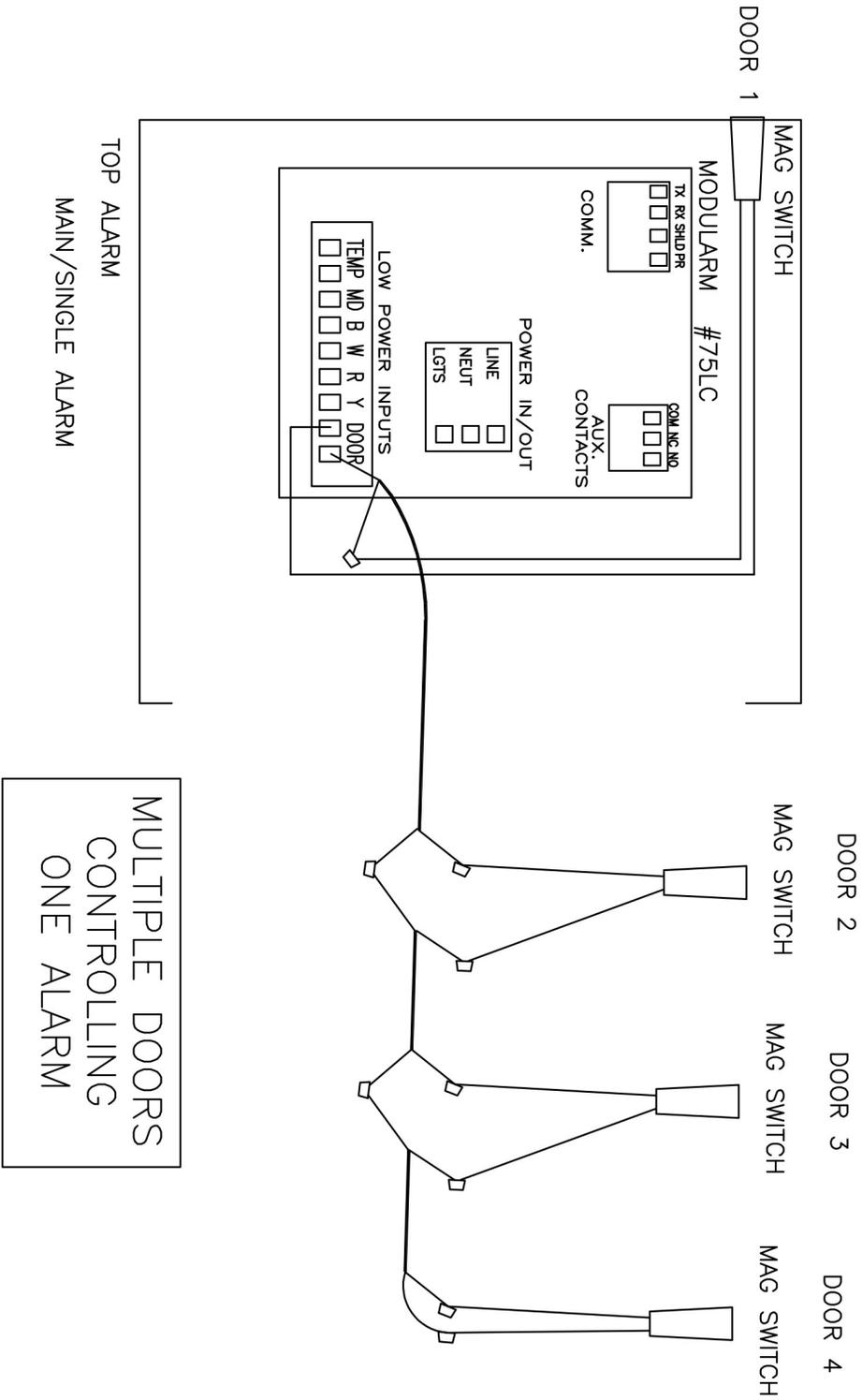
MULTIPLE MD-1 OR IP-1 CONNECTIONS CAN BE MADE TO THE SAME ALARM IF WIRED IN PARALLEL



— WIRING DIAGRAM —

# MULTI DOOR

MULTIPLE MAGNETIC SWITCH CONNECTIONS CAN BE MADE TO THE SAME ALARM IF WIRED IN SERIES



— WIRING DIAGRAM —