MODULARM® 75LC MULTI-MONITOR
INSTALLATION AND OPERATING MANUAL

modularm®
A KITCHEN BRAINS BRAND

KitchenBrains™
Well Connected.

NOTICE

Before installing, please thoroughly read these instructions so that you can fully benefit from all of the capabilities offered by the Modularm® 75LC Multi-Monitor.

C O N T E N T S

PRODUCT OVERVIEW
75LC

The Kitchen Brains® Modularm® 75LC Multi-Monitor is the standard in walk-in monitoring. The 75LC provides temperature, door ajar, AC failure and panic alarms. Using **Autoset™ technology**, the Modularm 75LC automatically adjusts alarm set points, thus eliminating the need for manual programming. The system saves energy, improves efficiency, reduces coil icing, lowers maintenance costs and helps to maintain product integrity.

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

- **Built in battery back-up** with recharging circuitry
- **Patented energy act compliant light control** activates by motion sensors
- **HI & LO Temperature Alarm** with Patented Autoset Technology.
- **AC Failure Alarm** with built-in rechargeable battery and built-in recharging circuitry
- **Door Ajar Alarm** (Requires include magnetic contacts)
- **Panic (Entrapment) Alarm** (Requires optional IP-1 Illuminated Button)
- **Timed Light Control**
- **HACCP monitoring** (Additional equipment required)
- **Remote notification** (Additional equipment required)
- **Built-in audible alarm**

PRODUCT ACCESSORIES

The accessories listed below connect directly to, and are powered by, the 75LC. These accessories may be used individually, or in combination, to meet the unique requirements of each installation.

AUTODETECT TECHNOLOGY selects the right alarm temp setpoints for monitoring a cooler or a freezer automatically, virtually eliminating the need for manual programming.

MC-1 MAGNETIC DOOR CONTACTS (INCLUDED)

• Senses door status

• Provides door ajar and lights on switches based on status

• Runs on low voltage

• One set included with each 75LC purchase

OR
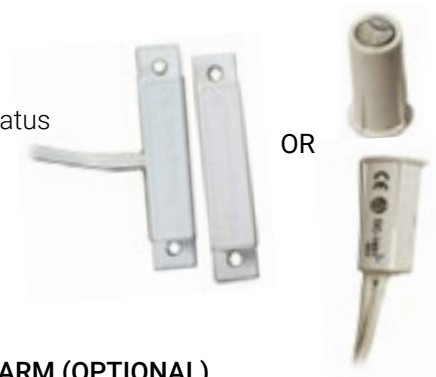
IP-1 LIGHT CONTROL AND PANIC ALARM (OPTIONAL)

• Mounts inside the cooler/freezer

• Controls the cooler/freezer interior light

• Provides visual and audio panic alarms

• Runs on low voltage

• Optional purchase

MD-1/MD1+2 MOTION DETECTOR (OPTIONAL)

• Mounts inside the cooler/freezer

• Detects motion to control the cooler/freezer interior light

• Runs on low voltage

• Optional purchase

PRODUCT FEATURES

AC POWER FAILURE ALARM

• 75LC "chirps" every 30-seconds
• "Power Failure" displays on screen
• For power failures less than one-minute:
 • Normal operation restores automatically
  • Incident is ignored

• If power failure continues after one-minute:
  • Alarm relay activates for remote notification
  • The 75LC will go dark to conserve battery life
  • Pressing the screen will wake the darkened unit
  • Status will again be displayed on screen

VISUAL ALARM ANNUNCIATION

TABLE 1. STATUS OF THE 75LC FOR ABNORMAL & ALARM CONDITIONS SCREENS

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

THREE BUTTON USER INTERFACE

TEST (UP)   LIGHTS (Prog)   SILENCE (Down)
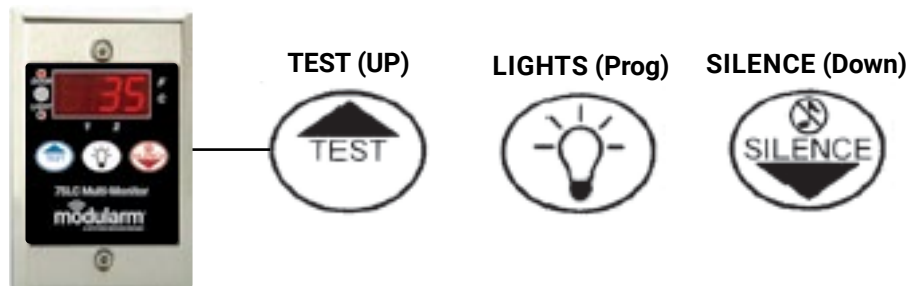
WHILE IN RUN OR ALARM MODE:
TEST: Press to test and view alarm parameter settings
LIGHTS: Press to manually activate and deactivate compartment
SILENCE: Press to acknowledge an alarm

WHILE IN PROGRAM MODE:
UP: Press to increase and alarm parameter values
LIGHTS: Press to select PAS-PRO™ preset and program menu options
DOWN: Press to decrease alarm parameter values

PRODUCT OPERATION

LIGHTING CONTROL OPERATION WITHOUT ACCESSORIES

THERE ARE TWO OPTIONS FOR CONTROLLING LIGHTS:

- **Regular Timed Lighting** (default):
  - To turn lights on and activate the lights-off timer, press the "Light" button on the 75LC
  - The lights will turn off when the lights-off timer expires
  - To manually turn lights off before the lights-off timer expires, press the "Light" button again

- **Untimed, Manual Light Control** (replaces light switches):
  - To turn lights on, press the "Light" button on the 75LC
  - To turn lights off, press the "Light" button again

LIGHTING CONTROL OPERATION WITH MC-1 MAGNETIC DOOR CONTACTS

OR

THERE ARE TWO OPTIONS FOR CONTROLLING LIGHTS:

- **Regular Timed Lighting** (default):
  - Open door to turn lights on
  - The lights will turn off when the lights-off timer expires
  - To manually turn lights off before the lights-off timer expires, close door

- **Untimed, Manual Light Control** (replaces light switches):
  - Open door to turn lights on
  - Close door to turn lights off

PRODUCT OPERATION

LIGHTING AND PANIC CONTROL OPERATION WITH IP-1 INSTALLED

THERE ARE TWO OPTIONS FOR CONTROLLING LIGHTS:

Patented Timed Lighting with AutoPanic (default):

- **To turn lights on and activate the lights-off timer and AutoPanic alarm,** press the "Light" button on the 75LC
  - **The IP-1 beeps and blinks** for 40-seconds
  - **Press the IP-1** within 40-seconds to:
    - **"Check in"** and keep the lights on for as long as the door remains closed
    - **Lock out the 75LC "Light" button** and prevent the light from being turned off from outside the walk-in
    - **Activate** the 20-minute AutoPanic timer
- **If the IP-1 is not pressed within 40-seconds,** the lights will turn off

- **After 20-minutes,** the IP-1 beeps and blinks again for 40-seconds
  - **Press the IP-1 to "check in"** and restart the AutoPanic timer
  - **The 20-minute alarm cycle** will repeat for as long as a person remains in the walk-in without opening the door
  - **If the IP-1 is not pressed within 40-seconds,** the 75LC will automatically sound a panic alarm

Untimed, Manual Light Control (replaces light switches):

- **To turn lights on,** press the "Light" button on the 75LC
- **To turn lights off,** press the "Light" button again

PRODUCT OPERATION

LIGHTING AND PANIC CONTROL OPERATION WITH IP-1 AND MC-1 INSTALLED

OR

THERE ARE TWO OPTIONS FOR CONTROLLING LIGHTS:

Patented Timed Lighting with AutoPanic (default)

 • **Open door** to turn lights on
   • **When door is closed,** the lights-off and AutoPanic timers activate
   • **The IP-1 beeps and blinks** for 40-seconds
   • **. Press the IP-1** within 40-seconds to:
     • "Check in" and keep the lights on for as long as the door remains closed
     • Lock out the 75LC "Light" button and prevent the lights from being turned off from outside the walk-in
     • Activate the 20-minute AutoPanic timer
   If the IP-1 is not pressed within 40-seconds, the lights will turn off

 • **After 20-minutes,** the IP-1 beeps and blinks again for 40-seconds
   • **Press the IP-1** to "check in " and restart the AutoPanic timer
   • **The 20-minute alarm cycle** will repeat for as long as a person remains in the walk-in without opening the door
   • **If the IP-1 is not pressed within 40-seconds,** the 75LC will automatically sound a panic alarm

Untimed, Manual Light Control (replaces light switches):
 • **To turn lights on,** press the "Light" button on the 75LC
 • **To turn lights off,** press the "Light" button again

PRODUCT OPERATION

LIGHTING AND PANIC CONTROL OPERATION WITH IP-1, MC-1 AND MD-1 OR MD-1+2 INSTALLED

OR

THERE ARE TWO OPTIONS FOR CONTROLLING LIGHTS:

Patented Timed Lighting with AutoPanic (default)
- **Open door** to turn lights on
- **When door is closed,** the lights-off and AutoPanic timers activate
  - **The IP-1 beeps** and blinks for 40-seconds
  - **Press the IP-1** within 40-seconds to:
    - **"Check in"** and keep the lights on for as long as the door remains closed
    - **Lock out** the 75LC "Light" button and prevent the lights from being turned off from outside the walk-in
    - **Activate** the 20-minute AutoPanic timer
  - **If the IP-1 is not pressed** within 40-seconds, the lights will turn off
- **After 20-minutes,** the IP-1 beeps and blinks again for 40-seconds
  - **Press the IP-1** to "check in " and restart the AutoPanic timer
  - **The 20-minute alarm cycle** will repeat for as long as a person remains in the walk-in without opening the door
  - **If the IP-1 is not pressed** within 40-seconds, the 75LC will automatically sound a panic alarm

Untimed, Manual Light Control (replaces light switches)
- **To turn lights on,** press the "Light" button on the 75LC
- **To turn lights off,** press the "Light" button again

CONFIGURATION MODE

ALARM OPERATION MODE

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 or 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. 13). The 10 available program parameters with symbols and ranges are shown on following pages.

PREVENTIVE MAINTENANCE REMINDER

PROGRAMMING REMINDER TO CLEAN CONDENSER AND INSPECT COIL:

1. While pressing and holding Silence, press Test. Display reads **"???"**, then **"0"**
2. Press and hold Test (Up) to scroll up or Silence (Down) to scroll down to the desired operation password
   a. For Clean Condenser Feature, scroll up to Password (70) to activate and password (80) to clear
   b. For Inspect Coil Feature, scroll up to Password (71) to activate and password (81) to clear
   c. Each number shown under menu option (70 & 71) represents 1 week. If selected to annunciate, it will sound a reminder to perform Inspection
3. Press Lights (Prog). Displays initially reads "Set" and then the password for the selected operation
4. 75LC returns to Run Mode, operating in accordance with selected operation password

CONFIGURATION MODE

USING PAS-PRO™ TO SELECT AN OPERATION PASSWORD PROGRAMMING (50 – 59)

See passwords and corresponding program menu parameters in tables 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 = "42o").
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" and the 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 the "**TEST"** switch to verify new parameter settings.

OPERATION PASSWORD EXAMPLES

EXAMPLE: USE PASSWORDS [20-29] TO CHOOSE SELECTED OPERATION

			OPERATION PASSWORDS, IN FAHRENHEIT			
			WITH AUTOPANIC		WITHOUT AUTOPANIC	
LIGHT OPERATION			(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
PASSWORDS			20	21	22	23	24
	PROGRAM MENU PARAMETERS	**SYMBOL**					
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.)	Infinate (**tOG**)	14 (MIN.)	150 (MIN.)	Infinate (**tOG**)
58	LIGHTS OPERATION MODE	Lts +OPr	Aut	Aut	tL	tL	tL
59	ALARM RELAY MODE	Alr + rLy	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

EXAMPLE: USE PASSWORDS [50-59]

			OPERATION PASSWORDS, IN CENTIGRADE			
			WITH AUTOPANIC		WITHOUT AUTOPANIC	
LIGHT OPERATION			(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
PASSWORDS			25	26	27	28	29
	PROGRAM MENU PARAMETERS	**SYMBOL**					
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.)	Infinate (**tOG**)	14 (MIN.)	150 (MIN.)	Infinate (**tOG**)
58	LIGHTS OPERATION MODE	Lts +OPr	Aut	Aut	tL	tL	tL
59	ALARM RELAY MODE	Alr + rLy	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

CONFIGURATION MODE

OPERATION PASSWORD EXAMPLES

PASSWORD	PROGRAM MENU PARAMETER
61	FACTORY SETTING TO REMOVE ACCESSORIES
10	LOCKING THE KEYPAD
105	UNLOCKING THE KEYPAD
20	FACTORY DEFAULTS

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)
70	REMINDER	Cln+Con	1=1 Week
71	REMINDER	Ins+Col	1=1 Week

CONFIGURATION MODE

PROBE CALIBRATION (PASSWORD 51)

The 75LC comes pre-calibrated to read proper temperature with Automatic Scale Conversion from F to C. Calibration parameter provides a means for offsetting the displayed temperature by +/-5 if so desired. **NOTE:** CALIBRATING offset doesn't change setpoints

RINGBACK DELAY (PASSWORD 56)

Ringback generates timed repeat audible alarms during an ongoing temperature or power failure alarm condition. Select desired time interval for this to occur.

LIGHTS OFF DELAY (PASSWORD 57)

The lights will turn OFF after the pre-programmed time. Factory default time is 14 minutes - Field programmable

LIGHTS OPERATION (PASSWORD 58)

"Aut" operation provides Timed Lighting with Auto panic. "tL" operation provides regular timed lighting.

ALARM RELAY (PASSWORD 59)

Normally Open (N/O) and Normally Closed (N/C) dry contacts are provided for low voltage of 28-30VDC at 1 amp. For main voltages, 120/240VAC, an external relay will be required with 28-30VDC at 1A. To control main voltages, 120/240VAC, an external relay will be required.

The two Relay Modes are:

UNLATCHED: Default Setting. Relay activates when alarm occurs and deactivates when Silence is pressed. Typical Application: Controlling a remote buzzer or light.

LATCHED: Relay activates when alarm occurs and deactivates when alarm condition has been 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.

INSTALLATION

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 Cooler/Freezer 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.

- 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, which are accessible on the Kitchen Brains website at www.kitchenbrains.com.

- 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.
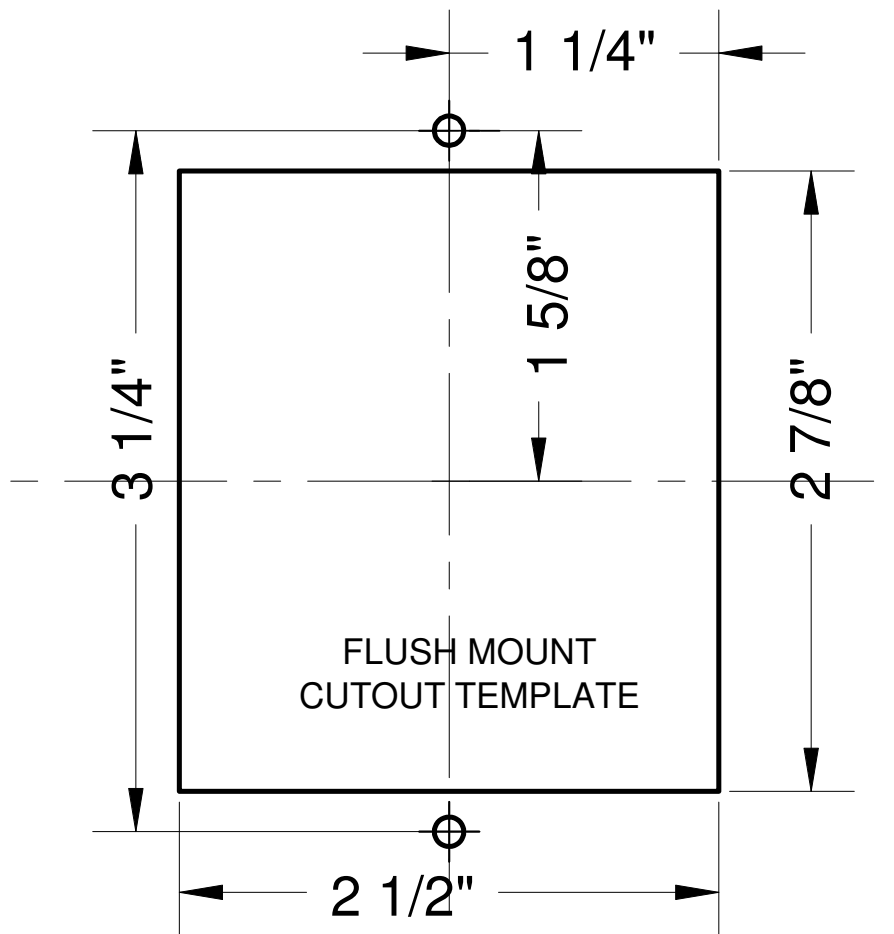
INSTALLATION GENERAL SAFETY MEASURES AND PRODUCT LIMITATIONS

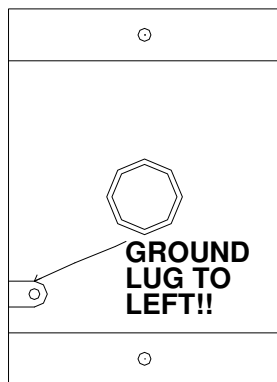|	
Mounting the Enclosure For The 75LC	Any enclosure used for 75LC mounting must provide multiple wire access hubs for running line voltage wiring and low voltage wiring in separate conduits. Determine the wire access hubs to be utilized for the installation and plug and seal any remaining unused openings 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 17). 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 walkin to prevent a pathway for condensation.
Mounting the MD-1 or MD-1+2	The MD-1 or MD-1+2 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 or MD-1+2 is a low voltage device. Wiring to the MD-1 or MD-1+2 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 or MD-1+2). Typical mounting location for the MD-1 or MD-1+2 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 or MD-1+2 horizontally with the white oval lens facing down. The red light inside of the MD-1 or MD-1+2 will illuminate whenever the MD-1 or MD-1+2 is activated. **WIRING:** See Wiring Diagrams, page 18. 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 on the 75LC	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.**

INSTALLATION GENERAL SAFETY MEASURES AND PRODUCT LIMITATIONS

Low Voltage Wiring (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.)	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 or MD-1+2 Connections"**, and **"IP-1 & MD-1or MD-1+2 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-1or MD-1+2 will both be installed, use the enclosure for the IP-1 as a junction box for connecting the MD-1 in accordance with the "**IP-1 & MD-1 or MD-1+2 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 protected, so as not to be damaged by products or items in the monitored area. Seal any openings made for passage of the probe wire into the Cooler/Freezer on the inside and the outside of the Cooler/Freezer to prevent a pathway for condensation.
Magnetic Contacts Mounting	Mounting method will vary depending on the type of contacts utilized. Make sure that the operating gap between the magnet part and the switch part of the contacts accurately detects a door open or door closed condition. (The DOOR light is on constantly when the door is open. This light may be utilized to assist in proper switch and magnet placement.) **NOTE:** For compartments with more than one door, multiple sets of contacts, wired in series, may be utilized to monitor the status of multiple doors.
Mounting the 75LC onto the enclosure	Mount the 75LC onto the enclosure with the provided mounting screws. If the 75LC is mounted onto an outdoor type single gang outlet box, route all wiring away from the battery when the 75LC is inserted. Inspect the installation for compliance with electrical codes, safety and sealing against moisture and condensation. Test to confirm that the Product is installed and are operating properly in accordance with these instructions. Periodic testing is recommended to ensure continued proper operation.
Locking the Keypad	Enter programming menu, select password "10" and press Lights (Prog) switch. Display reads "Set" then returns to run mode. The keypad is locked. To unlock, proceed as above, using password "105". The keypad is unlocked. Use password "61" for deleting any accessory that is no longer needed in the circuit.
Resetting the 75LC to Factory Defaults	Enter programming menu, select password "20" and press LIGHTS Button. Display reads "Set" then returns to run mode. The 75LC is now in factory mode.

FLUSH MOUNT CUTOUT TEMPLATE

1 1/4"

1 5/8"

3 1/4"

2 7/8"

FLUSH MOUNT
CUTOUT TEMPLATE

2 1/2"

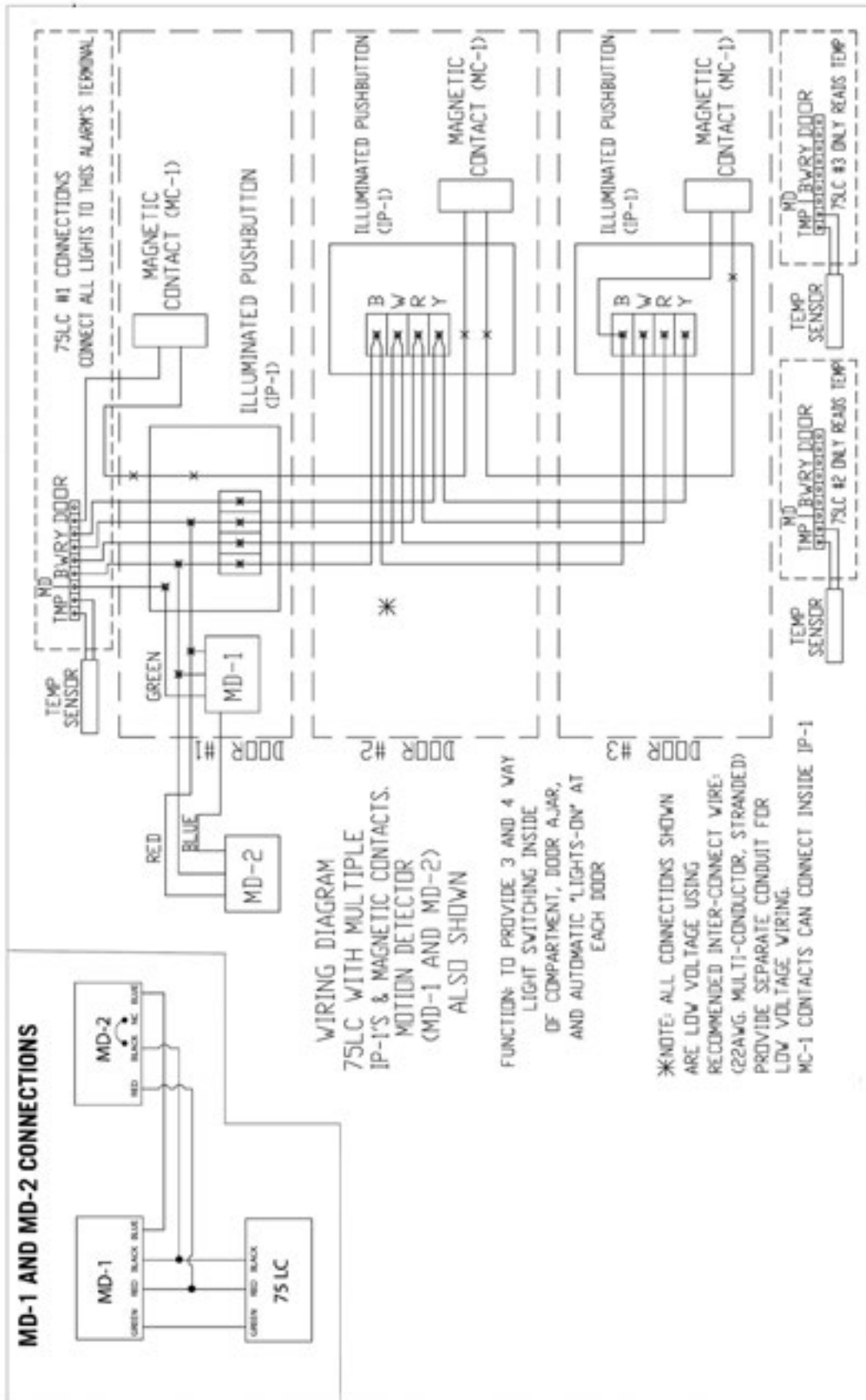## 75LC ENCLOSURE POSITION IMPORTANT!!

GROUND
LUG TO
LEFT!!

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
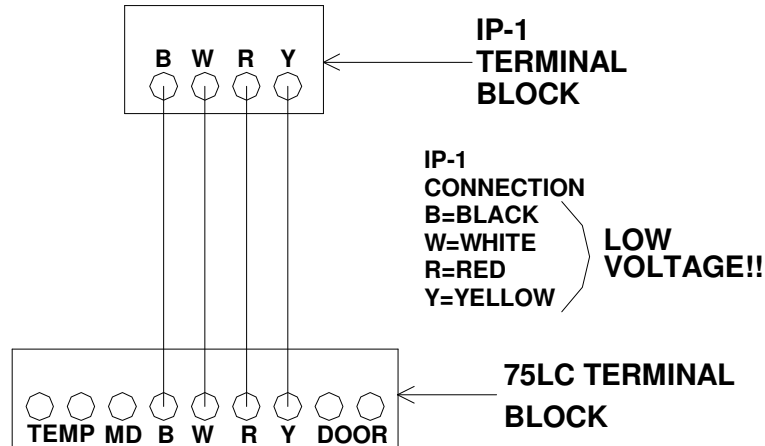
MD-1 AND MD-2 CONNECTIONS
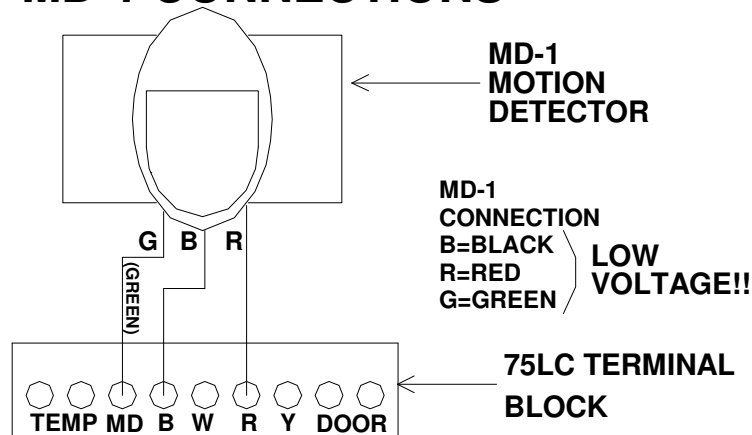
STANDARD ACCESSORIES AND BUILDING CONNECTION SCHEMATIC

MD-1 CONNECTION

STANDARD ACCESSORIES AND BUILDING CONNECTION SCHEMATIC

IP-1 CONNECTIONS

B W R Y

IP-1
TERMINAL
BLOCK

IP-1
CONNECTION
B=BLACK
W=WHITE
R=RED
Y=YELLOW

**LOW
VOLTAGE!!**

TEMP MD B W R Y DOOR

**75LC TERMINAL
BLOCK**

MD-1 CONNECTIONS

MD-1
MOTION
DETECTOR

G B R

(GREEN)

MD-1
CONNECTION
B=BLACK
R=RED
G=GREEN

**LOW
VOLTAGE!!**

TEMP MD B W R Y DOOR

**75LC TERMINAL
BLOCK**

MD-2 CONNECTIONS

STANDARD ACCESSORIES AND BUILDING CONNECTION SCHEMATIC

IP-1 & MD-1 CONNECTIONS

MD-1 MOTION DETECTOR

G B R

(GREEN)

IP-1 / MD-1 CONNECTION
B=BLACK
W=WHITE
R=RED
Y=YELLOW
G=GREEN

LOW VOLTAGE!!

IP-1 ENCLOSURE

USE IP-1 ENCLOSURE AS A JUNCTION BOX FOR CONNECTING MD-1

WIRE NUT OR OTHER APPROPRIATE SPLICING METHOD

B W R Y

IP-1 TERMINAL BLOCK

75LC TERMINAL BLOCK

TEMP MD B W R Y DOOR
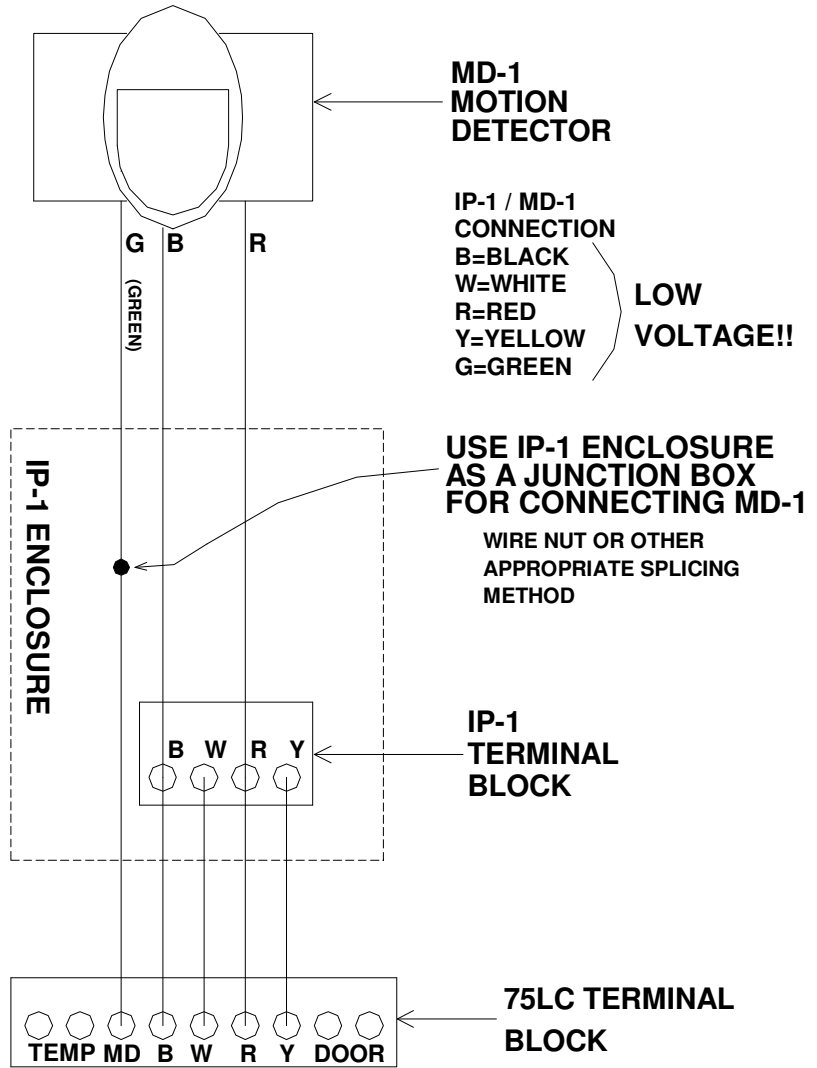
MODULARM 75LC WIRING DIAGRAM REV 3
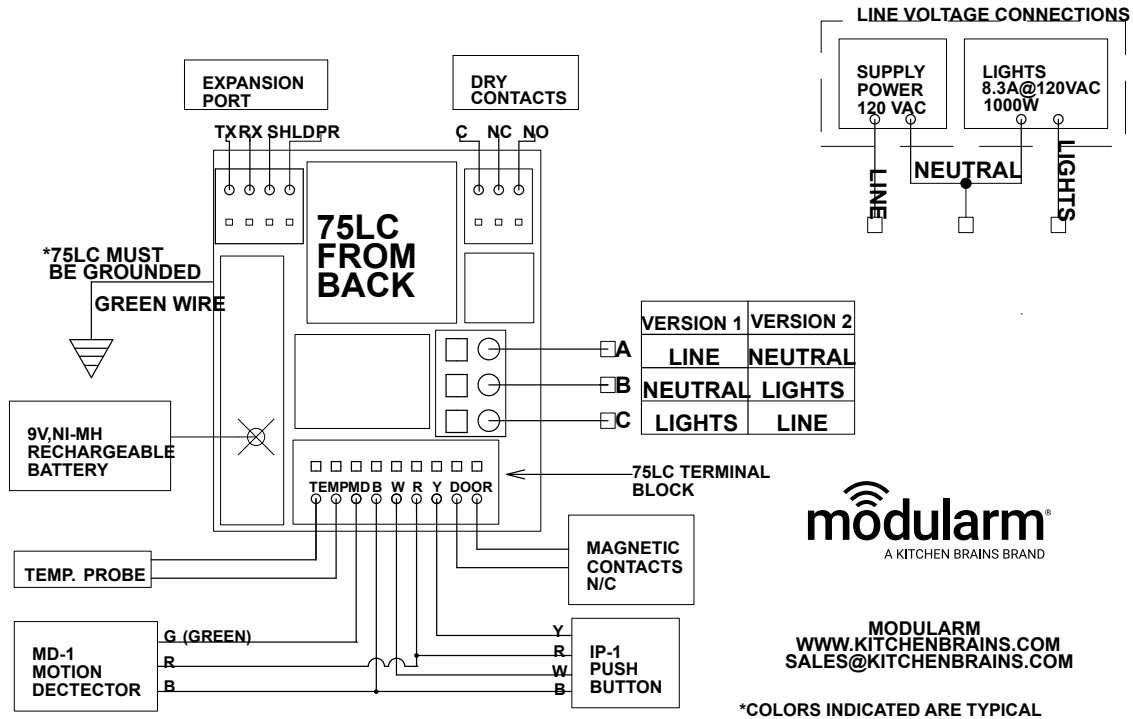
TROUBLESHOOTING GUIDE

MESSAGE DISPLAYED	POSSIBLE CAUSE	CORRECTIVE ACTION
HI + ## + (AL)	Temperature above HIGH set point for less time than alarm delay (AL indicates 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 and relocate if necessary
Lo + ## + (AL)	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
LO+OPN	Open circuit or out of range value on temp probe	Ensure proper electrical connection of temp probe, ensure proper sensing bulb and inspect run of wire
HI+ SHR	Short circuit or out of range value on temp probe	Ensure proper electrical connection of temp probe, ensure proper sensing bulb and inspect run of wire
HI+ SHR LO+OPN	Door sensor & temp probe are reversed	Door sensor & temp probe are reversed
OCC	Occupancy sensor is giving error	Check connection to Motion Detector and Motion detector device
PF	Line voltage is not detected	Check Line voltage, check for signs of physical damage
HLP (cannot silence)	Fault from IP-1	Inspect wire connection points [B W R Y] on 75LC and IP-1
ERR + ##	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
DOR (cannot silence)	Fault on door contact	Inspect wire connection points and physical contact alignment
Rapidly Changing Temperature	Empty compartment, poor sensor location, or wrong sensor	Fill compartment, relocate sensor and 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 TEMPERATURE

0ºC to 40ºC (32ºF to 104ºF)

HUMIDITY

90% non condensing

MEASUREMENT TEMPERATURE RANGE

-40ºF to 125ºF (-40ºC to 52ºC)

TEMPERATURE SENSOR

Standard 25' sensor. (Other lengths available)

RESOLUTION

1ºF or ºC

ACCURACY

+/- 1ºF from -25ºF to 70ºF (-32ºC to 21ºC), +/-2ºF 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.

IP-1 Illuminated Panic Button

DIMENSIONS

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

POWER SUPPLY

12VDC from 75LC

AMBIENT TEMPERATURE

-40ºC to 40ºC (-40ºF to 104ºF)

HUMIDITY

90% non condensing

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.

MD-1 Motion Detector

DIMENSIONS

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

POWER SUPPLY

12VDC from 75LC

OPERATING TEMPERATURE

-10ºC to 50ºC (14ºF to 122ºF)

MAX COVERAGE

12m x 12m (40' x 40') / 90º

MOUNTING HEIGHT

1.8m to 2.4m (6' to 8')

HUMIDITY

90% non condensing

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.

RoHS COMPLIANT   c(UL)us LISTED   NSF

Certifications apply to 75LC only

USE THE 75LC TO:

Monitor your Condenser

Monitor your Reach-In's

Monitor your Door Openings

Monitor your Walk-In's

Monitor your Evap

Monitor your Temperature

Save these instructions for future reference.

24/7 Toll-Free Technical Support
In the U.S., Canada and the Caribbean
1-800-FASTRON (1-800-327-8766)

Elsewhere
1-203-377-4414
or
saashelpdesk@kitchenbrains.com

KitchenBrains™
Well Connected.