Installation, Operation and Maintenance Manual

Leak Defense System

CRITICAL NOTES for installing the Leak Defense System are highlighted in shaded boxes throughout the document. It is essential these critical notes are read prior to installation.

VERY IMPORTANT!

- Bracing may be required if your plumbing system is unable to support this weight.
- Please contact our Technical Support team to confirm details of the installation to ensure the system will be installed correctly and no water using appliances go unaccommodated.

INSTALLER
Please leave this guide with the homeowner
when installation is complete

Need help?
Feel free to call us from 8am - 5pm Monday - Friday
Pacific Time: (866) 410-1134, ext. 2
support@senthydro.com

⚠ **WARNING**

THINK SAFETY FIRST

Please read carefully before proceeding with installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure.
Keep this Manual for future reference.

LEAKDEFENSE®

A **WATTS** *Brand*

Congratulations on installing the most advanced system available to protect Homeowners against catastrophic loss due to water damage.

The Leak Defense System monitors the flow of water into your home 24 hours a day, 7 days a week. Should a leak develop, the system will alarm, and, if the leak is not corrected, will automatically halt all water flow to the home before additional damage can occur.

System Overview

The system includes a motorized ball valve, extremely low flow sensors, and a control panel with a touch screen display. If water flow to your home continuously exceeds your system settings for more than your predetermined time, the alarm will sound and the ball valve will close — shutting off water to your home and potentially preventing major water damage. So the principle of the system is continuous water flow over time. Faucets, toilets, and other water fixtures in your house allow for water to start and stop. A leak is the one situation where the water does not stop. The Leak Defense System is looking for this.

System Features

• Constant monitoring of your water system (24 hours per day, 7 days a week)

• Leak detection with audio/visual alarm notifications

• Automatic water shut-off protection to minimize water damage

• State of the art wireless color touch screen control panel

• System retains all settings in memory, even if the electrical power is interrupted

• Simple menu driven programming

• Ability to turn water ON and OFF from the control panel or app

• Patented maintenance-free thermodynamic flow sensors

• Able to connect with other building/home management or security system

• Able to send notifications via email, text, and/or push

Device ID (found on the box, or in the control panel): _____

Serial Number (found on the box, or top of actuator): _____

Installation Date: _____

Installed by Company/Person: _____

Installer Phone Number: _____

Sentinel Hydrosolutions™ Leak Defense System

Help Line: 1.866.410.1134 ext. 2

M-F 8:00 am to 5:00 pm (PT)

support@senthydro.com

INSTALLER

After installation, review Leak Defense System operation with the owner

Using pages 32-37 of the Owner's Manual section as a guide:

a. Explain the system and use the control panel to demonstrate the various Leak Defense System functions.

b. Encourage the owner to physically interact with the control panel during your demonstration. This will promote a level of comfort and usability.

c. **Clearly explain the purpose of the Leak Defense System is to detect and protect from leaks and not to locate the source of leaks.**

d. Explain that the Leak Defense System will constantly monitor water flow every day.

e. Explain the importance of using the AWAY scene

    1. Explain the difference between the HOME and AWAY scene settings

    2. Explain that not using the AWAY scene when the home is unoccupied limits protection to the HOME scene settings.

> *NOTE:* Take the owner through an alarm scenario as part of the customer education and to test the alarm.

Owners

There are helpful videos on our website with information that might be more up to date regarding the operation of your Leak Defense System. You can access them at www.leakdefensesystem.com/videos/

Table of Contents

Image depictions of actuator for 1.5" to 3" valves

PN	DIN	A*	B	C	D	E	F	G	H**	I	J	K	Weight
LDS-3-075	DN20	.750 (19.1)	7.72 (196)	6.93 (176)	4.84 (123)	6.41 (163)	3.00 (76.2)	.600 (15.2)	3.50 (88.9)	1.57 (39.9)	2.40 (61.0)	6.50 (165)	4.60 (2.09)
LDS-3-100	DN25	1.00 (25.4)	8.33 (212)	7.36 (187)	4.84 (123)	6.41 (163)	3.35 (85.1)	.600 (15.2)	3.50 (88.9)	1.93 (49.0)	2.40 (61.0)	6.85 (174)	5.35 (2.43)
LDS-3-125	DN32	1.25 (31.8)	8.63 (219)	7.50 (191)	4.84 (123)	6.41 (163)	3.66 (93.0)	.600 (15.2)	3.50 (88.9)	2.30 (58.4)	2.40 (61.0)	7.16 (182)	6.15 (2.79)
LDS-3-150	DN40	1.50 (38.1)	9.56 (243)	8.14 (207)	4.84 (123)	6.41 (163)	4.15 (105)	.600 (15.2)	3.50 (88.9)	2.87 (72.9)	2.90 (73.7)	7.65 (194)	7.60 (3.45)
LDS-3-200	DN50	2.00 (50.8)	12.0 (305)	10.2 (259)	6.18 (157)	7.50 (191)	4.80 (122)	.600 (15.2)	3.50 (88.9)	3.60 (91.4)	2.90 (73.7)	8.30 (211)	12.1 (5.49)
LDS-3-250	DN65	2.50 (63.5)	14.2 (361)	12.0 (305)	7.28 (185)	7.87 (200)	6.10 (155)	.600 (15.2)	3.50 (88.9)	4.51 (115)	2.90 (73.7)	9.60 (244)	18.7 (8.48)
LDS-3-300	DN80	3.00 (76.2)	15.0 (381)	12.4 (315)	7.28 (185)	7.87 (200)	6.89 (175)	.600 (15.2)	3.50 (88.9)	5.35 (136)	2.90 (73.7)	10.4 (264)	27.1 (12.3)
LDS-3-400	DN100	4.00 (101.6)	16.8 (427)	13.57 (345)	8.31 (211)	9.33 (237)	7.84 (199)	.600 (15.2)	3.50 (88.9)	6.46 (164)	2.90 (73.7)	11.4 (288)	40.4 (18.3)

**A is Nominal   **H is Average Length   **All Fittings are NPT   **in (mm)   **lb (kg)

PLANNING & SYSTEM PREPARATION

STEP 1: Tools and Supplies Needed

I. Pipe cutting, soldering equipment and supplies

II. Tape measure

III. Pipe marking pen

IV. #2 Phillips screw driver

V. 1⁄4" twist drill bit and drill (diameter of no more than .160")

VI. 2 ea. - #6 drywall anchors and screws

STEP 2: Pre-Installation Survey

There are six steps necessary to properly perform a pre-installation survey. These are:

1) Determine the best location for the Leak Defense System valve

The valve must be located downstream of any fire sprinkler system and, ideally, should be located down-stream of all irrigation lines. The valve should be installed in an indoor location free from direct sun and moisture.

If installed outdoors, ensure the LDS valve/actuator is protected against rodent damage, gardener damage, freeze damage, and UV damage, by wrapping it in a protective insulated pouch or plastic protective enclo-sure. Sentinel can provide one of these options upon request. The valve should also be located at least 18" above grade.

2) Determine if any of the following water using systems are downstream of the Leak Defense System valve:

a) Reverse Osmosis Water Purification System

b) Water Softener System

c) Irrigation System

d) Automatic Pool Fill System

e) Outside hose bibs

f) Booster pump with holding tank/bladder

g) Any other appliance that may automatically use water

3) If any of the above are present down-stream of the Leak Defense System valve, please contact your sales representative for accessories to accommodate these items, or see if you can safely install the system after said items.

4) Determine where a non-switched 120 VAC outlet is in a dry location and determine how you will get the (2 conductor) power wire to the transformer at this location

24 VAC from the transformer should not be run longer than 100 feet. If a longer power wire is needed, it is recommended that a new 120VAC outlet be installed closer to the Leak Defense System

5) Determine where the customer would like the wireless control panel and confirm it is within 100' of where the valve is installed

A standard 120 outlet is required to provide power to the wireless panel

6) A battery backup or generator is recommended for locations that are prone to power outages

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ATTENTION INSTALLER!

If this is your first installation, call before installing the LDS and Spring Check Valve.

Otherwise, call after installing for control panel setup: 8:00am to 5:30pm PT | 760-884-8300 ext. 2

FAILURE TO CALL AND SPEAK WITH ONE OF OUR TECHNICIANS VOIDS ANY WARRANTY ON THE LEAK DEFENSE SYSTEM.

INSTALLING THE VALVE/FLOWBODY

STEP 3: Determining the valve location for the Leak Defense System

The Leak Defense System valve must be installed on the main water line and downstream of the primary shut-off valve, pressure regulator, irrigation line and fire sprinkler line.

Typical location of the Leak Defense System valve installation will be in a garage, basement or crawl space. If the home is on a concrete slab, the valve can be installed in the garage or before water enters the home. In the latter case, the valve should be located at least 18" above grade. It must be protected from direct sun exposure, moisture and freezing conditions.

Other important considerations include:

a. Install the valve in an accessible location allowing easy access for proper installation and maintenance
b. Some water utilities require the valve be a minimum of 18" downstream of the water utility meter
c. If possible, install the valve downstream of a manual shutoff valve to allow for easier maintenance
d. A bypass around the valve is not required but may be recommended
e. Bracing may be required if your plumbing system is unable to support the weight.

SEE FIGURE 1
GENERAL PIPING DIAGRAM
PAGE 20
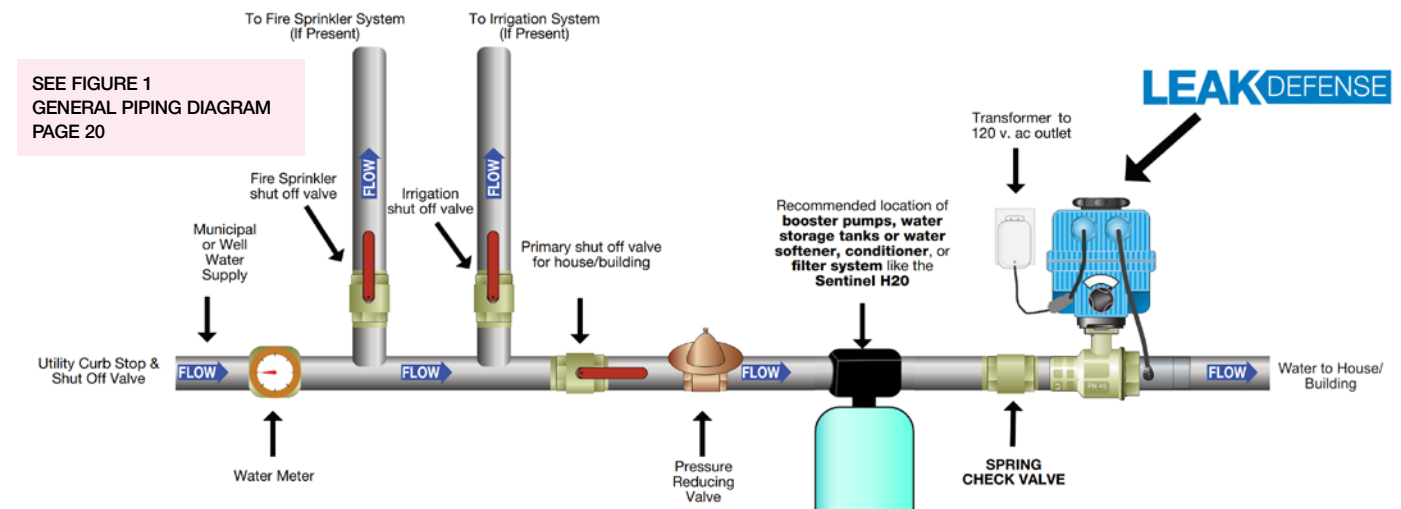
IMPORTANT: If the above diagram does not reflect your actual piping layout, call us for recommendations to accommodate your unique piping configuration and ensure no water inside the premises goes unmonitored. (866) 410-1134, ext. 2 or email support@senthydro.com

IMPORTANT: The valve cannot be installed where it may be submerged in water or exposed to moisture or freezing conditions. An appropriate insulated or water proof box should be installed to protect the Leak Defense System.

Note: If there is a fire sprinkler and/or irrigation system that branches off the building supply downstream of the utility meter, the Leak Defense System valve must be installed on the building supply downstream of the fire sprinkler, and if possible, irrigation supply branch. In no instance may the Leak Defense System be installed in a way that it will interfere with the fire sprinkler system.

Note: The Leak Defense System sees water flowing, but does not differentiate between flow direction (flow in vs. out). As water main pressures fluctuate, there may be a slight flow out of the home/office which will be seen as flow. A backflow preventer valve (spring check valve) is recommended to remedy this. This backflow will usually only be an intermittent or sporadic event, while a leak will have continuous water movement.

POWER & PANEL LOCATION

STEP 4: Locate an electrical outlet for the valve

a. Locate an available 120 VAC outlet close to the valve into which the transformer can be plugged.
Make sure this outlet is not connected to an on/off switch or a GFI.

b. The 120 VAC outlet should not be more than 100 feet from the valve. If a longer power wire is needed, it is recommended that a new 120 VAC outlet be installed closer to the valve.

Critical: The outlet must be located in a dry location.

STEP 5: Determine wireless control panel location

a. The control panel should be located inside near the most frequently used door of the home or in an easily accessible area.

b. Once a location is chosen, make sure there is an outlet within 6' to provide power to the wireless panel with the provided 12VDC power supply.

c. The wireless control panel should be located no farther than 100 feet from the Leak Defense System valve. 50' or less is recommended for reliable connection.

d. The standard power supply cable length is 6'. For concealing the low voltage cable behind drywall, a hardwire connection with additional cable length is available upon request.

Note: Please install control panel at least 8 inches (20 centimeters) from a common use area, per FCC/IC regulations.

LDS Panel

POLD Panel (Non-LDS)

2.5" (63.5mm)

Ø.18" (4mm)

Ø.4" (9mm)

Speaker

9VDC Barrel Plug 5.5 x 2.1mm

6ft (182cm) Cord Length

Openings for Optional Wired Connection to LDS, External Power, Contact Closure Alarm Input, or Relay Alarm Output (18-24AWG Stranded)

2.27" (57mm)

1.77" (44mm)

2.8" (72mm)

3.66" (93mm)

6.125" (156mm)

1.02" (26mm)
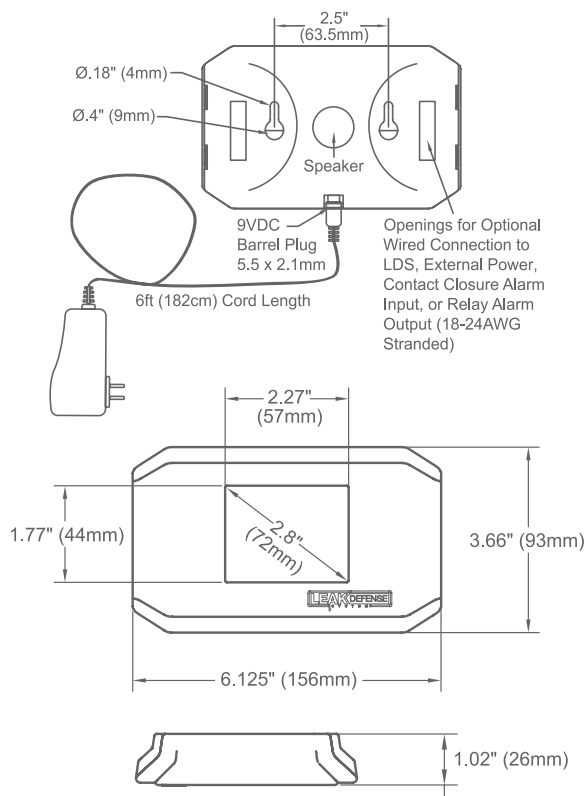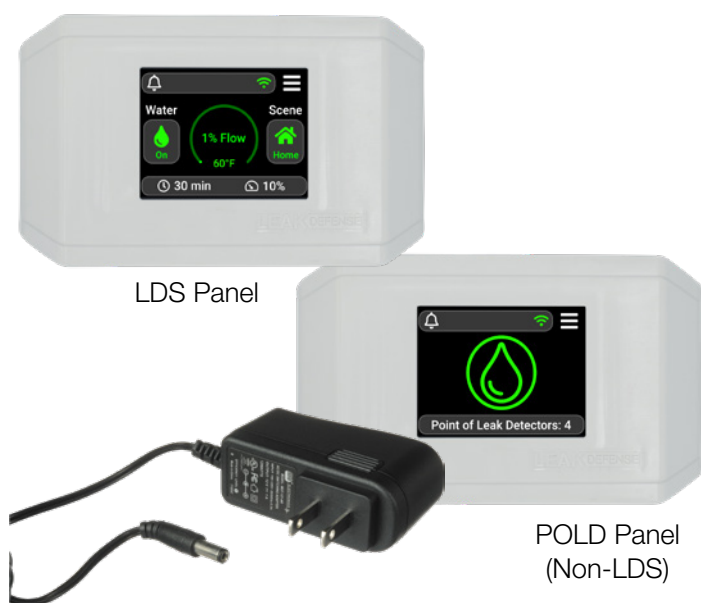
INSTALLING THE VALVE/FLOWBODY

STEP 6: Cut a space to accommodate valve/flowbody

Cut space in existing pipe wide enough to accommodate the valve/flowbody.

The Leak Defense System includes a lead-free brass valve connected to a stainless steel flowbody. This valve/flow-body assembly is designed to be installed as one unit and should never be disassembled. If a split-system is needed, contact us.

The Leak Defense System requires a length of pipe be removed to accommodate the valve/flowbody assembly and any connectors. The Leak Defense System valve/

flowbody assembly can accept all common methods of pipe connections including unions, sweat adapters threaded pipe, or lead-free brass unions. Dielectric unions should only be used when connecting galvanized pipe to our system. Installer is responsible to maintain continuity of electrical grounding system per local codes.

Critical: If some form of sweat adapter is used, it is imperative that heat from the torch does not reach the valve/flowbody as this may cause permanent damage to the Leak Defense System unit.

STEP 7: Install Leak Defense System valve/flowbody

a. Install using standard unions, sweat adapters, or threaded pipe.

b. Do not install in prolonged direct sunlight. This causes water in the valve to heat and the probes will interpret this as water flow.

c. Make sure the valve has been installed in the orientation specified on the label (i.e. Vertical Up, Vertical Down, or Horizontal) with water flowing in the direction of the arrow on the flow body.

Important: Bleed air slowly from the piping system to prevent damage to the Leak Defense System or to any other plumbing fixtures when water flow is restored.

d. Restore water supply.

e. Check for leaks at the valve/flowbody and probe.

WARNING: Do not place any tools on the delicate black portion of this sensor.

CHECKS & PROGRAMMING

Manual vs. Automatic Valve Position:

WARNING: Valve should be unplugged from power prior to attempting to open/close the valve manually.

Systems 1.5" or smaller have a manual override on the front of the blue actuator. Normal operation requires the dial be positioned in the "AUTO" mode. "MAN" is only to be used when system needs to be overridden manually to open/close the valve.

Systems 2" or larger, press and hold black knob on top of blue actuator and turn to desired position.

STEP 8: Connecting to power

a. Connect the gray connectors on the transformer wire and valve power wire.

b. Make sure wires are connected to the transformer AC and AC terminals.

STEP 9: Mounting the wireless control panel directly on a wall

a. Use a pencil to mark the location of the mounting holes in the housing on the wall.

b. Using #6 drywall anchors and screws, place 2 screws 2-1/2" apart, then slip panel onto screws.

STEP 10: Provide power to the system

a. Plug the white 24VAC valve transformer into the outlet that was located in Step 4. Actuator should fully close and fully reopen.

b. Plug in the black 12v transformer to the wireless control panel.

c. Many customers qualify for insurance deductions and require a certificate of installation. We require pictures of all installed components, and pictures of Control Panel home page and status page after calibration (step 12). Send these images to sales@senthydro.com or text to your salesperson's direct number. Include Device ID # and installation address with your text or email.

Optional Power Supply: Should you wish to hide the power supply wire feeding the control panel, an electrician can run the low voltage wire behind the drywall and connect it to screw terminals on the back of the control panel circuit board.

THE WIRELESS CONTROL PANEL

The wireless control panel will be used to set up and control your Leak Defense System.

From here you will be able to perform certain tasks like placing your Leak Defense in the **Home** 🏠, **Away** 🏃 or **Standby** 🚰 Scene. You will also be able to adjust the **Time to Alarm** (continuous time water can flow) in the **Home** and **Away** mode and the length of time you want the Leak Defense to remain in **Standby**. The trip rates for **Home** and **Away** mode are also set here. The main screen will also allow you to Turn Water Off, check the status, and adjust the Leak Defense System.

Please keep in mind that it takes a few seconds for the wireless panel to communicate with the Leak Defense System valve.

Here is how it works

STEP 11:

Confirm control panel water shut-off feature	
DESIRED ACTION	**ON-SCREEN ACTIONS**
Turn water OFF	Main Screen
	Tap the Water 💧 button
	When asked "Turn Water Off?" tap Yes
	Valve will start closing and Water icon 💧 will turn GREY
	When fully closed Water icon 💧 will be YELLOW with a slash
Turn water ON	Main Screen
	Tap the Water 💧 button
	When asked "Turn Water On?" pres Yes
	Valve will start opening and Water icon 💧 will turn GREY
	When fully open Water icon 💧 will change to match the color of the scene currently selected. Home = GREEN, Away = BLUE, Standby = ORANGE

THE WIRELESS CONTROL PANEL

Note: Recommended Min mW should be at or slightly above the mW when the valve is closed. Max and Min should be fairly far apart.

Please call Technical Support at 866-410-1134 Option 2 so we can verify and record proper calibration values, to validate the warranty.
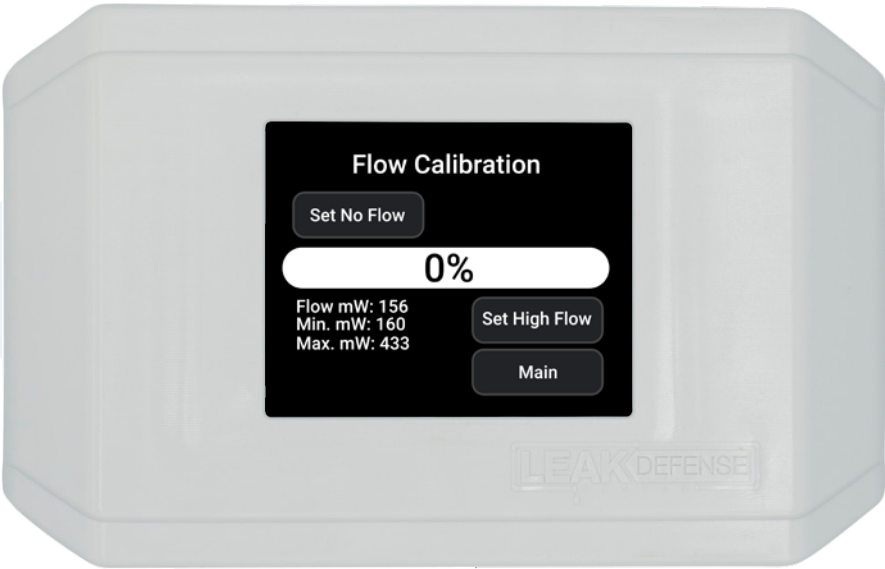
STEP 12:

Calibrate the system	
DESIRED ACTION	**ON-SCREEN ACTIONS**
Calibrating the Leak Defense System	Main Screen
Navigating to the Calibration Screen	Tap the Menu ☰ button.
	Tap the Advanced ⚙ button
	Tap the Factory button
	Type **65530** on the keypad, then tap the top right button (where it displays this number)
	Type **1** on the keypad, then tap the top right button
	You are now in the **Flow Calibration** screen
Set No Flow	Once the water has been turned OFF and you are on the Flow Calibration screen, tap the **Set No Flow** button
	Return to the main screen by tapping the Exit button
Set High Flow	Once the water has been turned ON and you are on the Flow Calibration screen, tap the **Set High Flow** button
	Return to the main screen by tapping the Exit button
	Turn off faucet, observe the flow arc, water % will lower to 0% after several seconds
	If it does not, you may have water running or a leak

The most common sources of flows that could be identified as leaks are leaky toilet flappers, leaking seals in faucets, bad rubber washers in hose bibs (outdoor water hose spigots), and evaporative type humidifiers.

THE WIRELESS CONTROL PANEL

STEP 13:
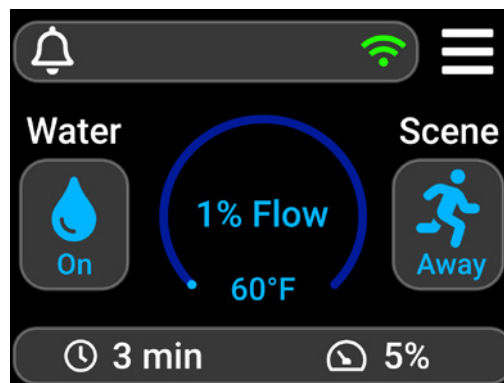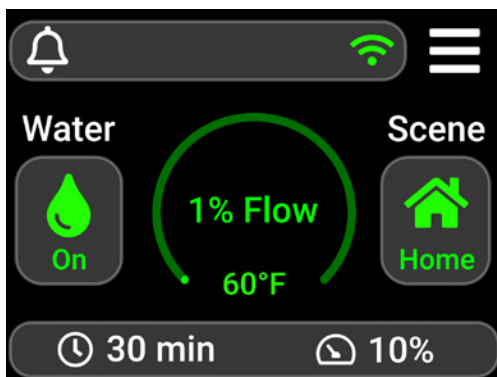
DESIRED ACTION	ON-SCREEN ACTIONS
Verify and set automatic shut-off features	
Setting Trip Rate % – HOME Scene Trip Rate = Sensitivity or the amount of water flow needed to trigger time to alarm	Main Screen with Scene set to **Home** 🏠 (**Water, Flow,** and **Scene** symbols are GREEN)
	Tap the **Trip Rate** ⊘ icon
	Enter trip level percentage between 1 and 100
	Tap top right button to select trip level setting (Factory default is10%)
Setting Time to Alarm – HOME Scene Time to Alarm = The amount of time water is allowed to flow for before the valve closes	Main Screen with Scene set to **Home** 🏠 (**Water, Flow,** and **Scene** symbols are GREEN)
	Tap the **Time to Alarm** ⊕ icon in the bottom left
	Enter the time in minutes
	Tap the top-right button to confirm the programmed time
	(Can be set from 1 minute to 4 hours based on customer's preference. Example: 1 hour = 60)
Setting Trip Rate % – AWAY Scene	Main Screen with Scene set to **Away** 🏃 (**Water, Flow,** and **Scene** symbols are BLUE)
	Tap the **Trip Rate** ⊘ icon
	Enter trip level number between 1 and 100
	Tap top right button to select trip level setting (Factory default is 10%)
Setting Time to Alarm – AWAY Scene	Main Screen with Scene set to **Away** 🏃 (**Water, Flow, and Scene** symbols are BLUE)
	Tap the **Time to Alarm** ⊕ icon in the bottom left
	Enter the time in minutes
	Tap the top-right button to confirm the programmed time
	(Can be set from 1 minute to 4 hours based on customer's preference. Example: 3 minutes = 3)

THE WIRELESS CONTROL PANEL

Standby Scene allows water to flow without alarming for the entire duration of Standby. Ideally this is used to allow contractors to work without causing the system to alarm or when filling a pool downstream of the system. If there are POLDs installed, you can choose whether or not they can alarm the system during standby.

STEP 14:

Other features	
DESIRED ACTION	**ON-SCREEN ACTIONS**
Setting the Standby Scene	Main Screen with Scene set to **Standby** 🚰 (**Water, Flow,** and **Scene** symbols are ORANGE).
ATTENTION: Putting the leak defense system in standby means water flowing into the structure is NOT monitored. A leak will go undetected in standby mode.	Tap the **Time** ⏱ icon in the bottom left.
	Enter the time in minutes.
	Tap the top right button to confirm the programmed time.
	(Can be set from 1 minute to 48 hours based on customer's preference. Example: 3 hours = 180)
Alternative method to Turn Water On/ Off, Change Scene, Trip Rate, and Time to Alarm	Tapping the middle of the circular percentage bar brings up a menu with options to **Turn Water On/Off**, Change **Scenes**, and adjust the **Trip Rate** and **Time to Alarm** as well as check the **Status** of the system.

ALL PURPOSE INTERFACE (API)

STEP 15: API-All Purpose Interface

The All-Purpose Interface (API) is a device that can interface to various accessories to complement the performance of the LDS system, reduce nuisance alarms, and improve the customer's experience and satisfaction with the system. It should be placed within 100' of the control panel to maximize signal strength. A few of the common adaptations and applications are described below.

POLD+ if you were to wire up a POLD sensor to the API (and it is polarized) the Sensor would have its black wire going to GND and its red wire going to POLD+. When the POLD+ goes to GND level, it trips.

To reset the alarm: First make sure that the sensor is completely dry. Then press and hold the TEST button on the API for 3 seconds. The LED will go dark until the button is released and will stay lit until the alarm condition is cleared at the control panel.

The opto isolators used for HOME/AWAY and STANDBY have non-committed inputs for maximum flexibility.

The input voltage is not to exceed 12 volts.

The IN+ would need to go to the positive input potential through a switch or wire.

The IN- would need to go to the negative or GND potential through a switch or wire.

Each opto-isolator has its own IN+ and IN- and they can be wired for high going signals, or GND (low) going signals. The +REF and -REF signals are used as the voltage references for the optos. +REF usually reads 12VDC, while -REF is GND.

If (for example) you want the STANDBY to activate when its signal is grounded, then you would wire up the IN+ of STANDBY to the +REF and the IN- goes through a switch or relay to GND. If connecting to an alarm panel, make sure that the GND's are the same potential by connecting its GND to the API GND or -REF pins.

If (for example) you wanted to hook up an Alarm Panel that goes to 12 volts when in AWAY mode. Then wire the Alarm Panel GND and HOME/AWAY IN- to the API GND or -REF and wire the HOME/AWAY IN+ to the 12 volt AWAY trigger signal. (HOME mode is when the AWAY mode is not activated.)

These are the valid MODE SEL dial position settings:

7 - Relays change on Alarm only

F - Relays change on Alarm and Water off

These are additional MODE SEL dial position settings
(0 - 6 and 8 - E are currently unused):

0 - H/A DIS	STBY DIS	POLD DIS	8 - H/A DIS	STBY DIS	POLD DIS
1 - H/A ENA	STBY DIS	POLD DIS	9 - H/A ENA	STBY DIS	POLD DIS
2 - H/A DIS	STBY ENA	POLD DIS	A - H/A DIS	STBY ENA	POLD DIS
3 - H/A ENA	STBY ENA	POLD DIS	B - H/A ENA	STBY ENA	POLD DIS
4 - H/A DIS	STBY DIS	POLD ENA	C - H/A DIS	STBY DIS	POLD ENA
5 - H/A ENA	STBY DIS	POLD ENA	D - H/A ENA	STBY DIS	POLD ENA
6 - H/A DIS	STBY ENA	POLD ENA	E - H/A DIS	STBY ENA	POLD ENA
7 - H/A ENA	STBY ENA	POLD ENA	F - H/A ENA	STBY ENA	POLD ENA

ALL PURPOSE INTERFACE (API)

STEP 15: API-All Purpose Interface (continued)

These settings will selectively create events that the API can generate and transmit to the control panel. DIS means that function is disabled and the system will ignore any activity on those input lines. ENA means that function will transmit and the panel will respond to input activity on those lines.

The LED will flash briefly during data transmissions and glow solid when the ALARM is active.

The RELAYS both operate together (as of rev 1.00).

• If the API is in Dial Position 7, the API relays will activate when the system goes into alarm, and deactivate when the user clears the alarm.

• If the API is in Dial Position F, the API relays will activate when the system goes into alarm or when the water is turned off (via control panel or web), but relays will only deactivate after the water is turned back on.

API INSTALLATIONS

Connecting a Four-Hour or Six-Hour Timer to the LDS API

This accessory is typically installed outdoors for a gardener or landscaper to remotely and manually put the LDS in standby (ignore water flow) mode for the length of time the timer is rotated to.

• Connect the red wire from the timer to IN– (below STANDBY) on the API.

• Connect the black wire from the timer to –REF on the API.

• Place a jumper from IN+ (below STANDBY) to +REF.

• The yellow arrow dial on the API should face F.

• When the timer is activated you should see the Leak Defense control panel switch from Home or Away to Standby. When the timer runs out, the Leak Defense should go back to the original state of Home or Away.

ATTENTION: Putting the leak defense system in standby means water flowing into the home is NOT monitored. A leak will go undetected in standby mode.

DIAL POSITIONS:

F: Triggers on Water Off command (alarm or user requested).
Ideal for connecting to circ pump switches and solid state relays

7: Triggers on Alarm Only
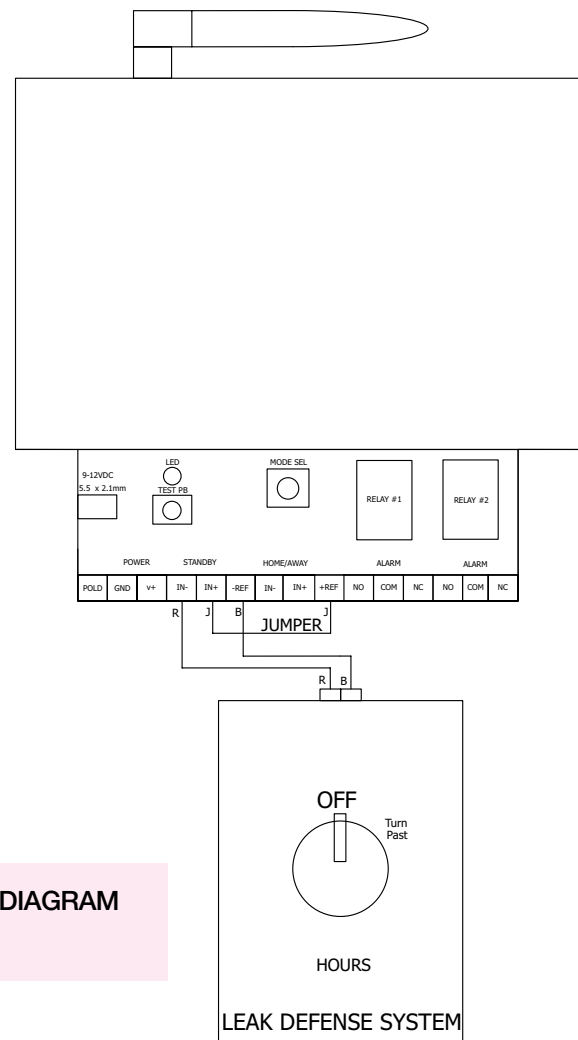**Ideal for connecting to alarm panels**

FOR TECHNICAL SUPPORT:
Please call our office at 1.866.410.1134 – 8:00am to 5:00pm Pacific Time

API INSTALLATIONS

Connecting POL and SS relays to API

This application is typical for when a 240VAC (up to 50amp) well pump or pressure pump is wanting to be disconnected when a leak is detected with a POL or when the LDS valve closes upon suspected water leak.

For terminals 1 and 2 of solid-state relay #1, split a hot leg of the well pump wire and connect one side of the split wire to terminal 1 and the other to terminal 2. For terminals 1 and 2 of solid-state relay #2, split the other hot leg of the well pump wire and connect one side of the split wire to terminal 1 and the other to terminal 2.

On the API place a jumper between +REF and NO on either of the API relays.

Wire the solid-state relay input terminals in series as follows.

Take COM of the same API relay and run a wire to terminal 3 of solid-state relay #1. Then take terminal 4 of solid-state relay #1 and connect it to 3 of solid-state relay #2, with a jumper wire. Then take terminal 4 of solid-state relay #2 and run a wire back to –REF on the API.

If you purchased a wired POL, the POLD and GND terminals of the API get connected to the two wires of the POL sensor. No connection necessary for wireless POLD sensor.

Note 1: The yellow arrow dial, located toward the center of the API circuit board, needs to be facing F.

Note 2: To test the POL sensor, take a moist paper towel and touch the 2 metal sensor pins. The Leak Defense System will go into alarm and the solid-state relays should turn off the well pump. Push the reset button on the API before pressing Clear Alarm on the Leak Defense control panel.

Note 3: When alarm is active, a 6-volt signal is being applied across each of the solid-state relay's terminal 3 and 4, from the API. This causes the normally-closed solid-state relay to open and shut off the pump.
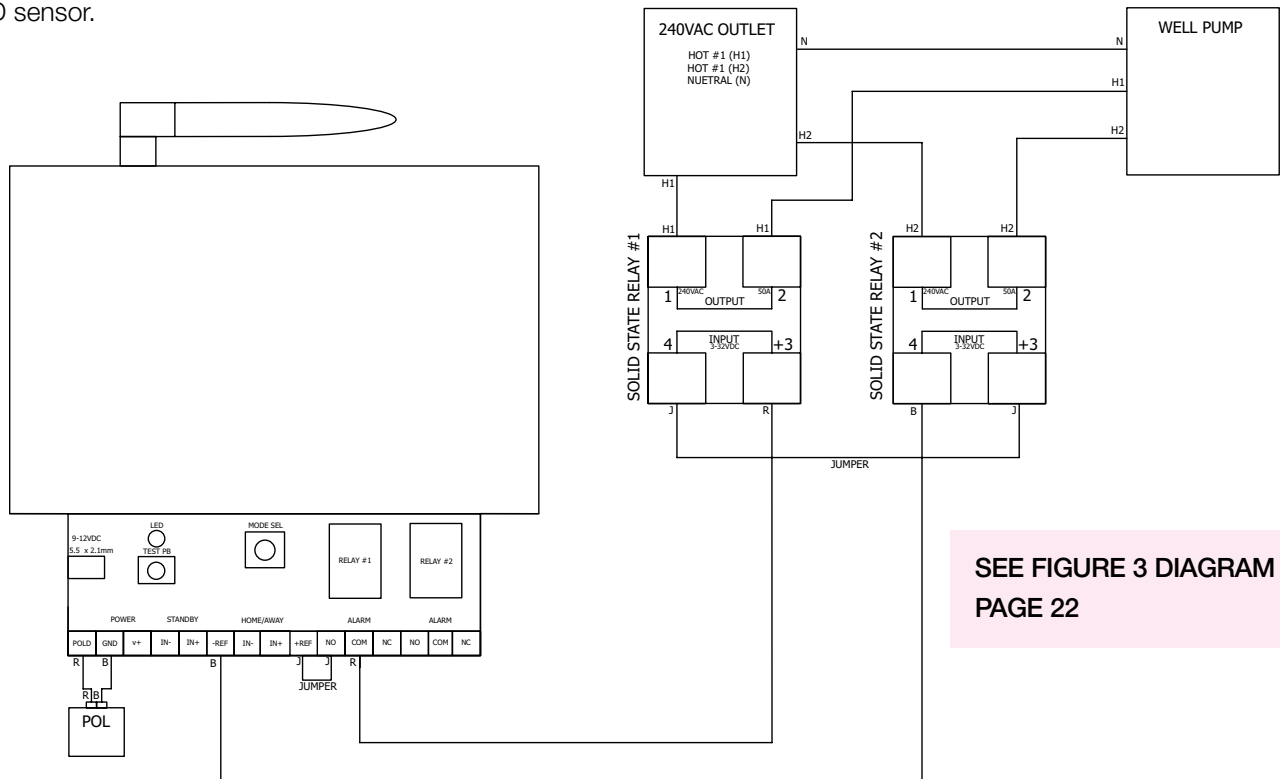
SEE FIGURE 3 DIAGRAM PAGE 22

FOR TECHNICAL SUPPORT:
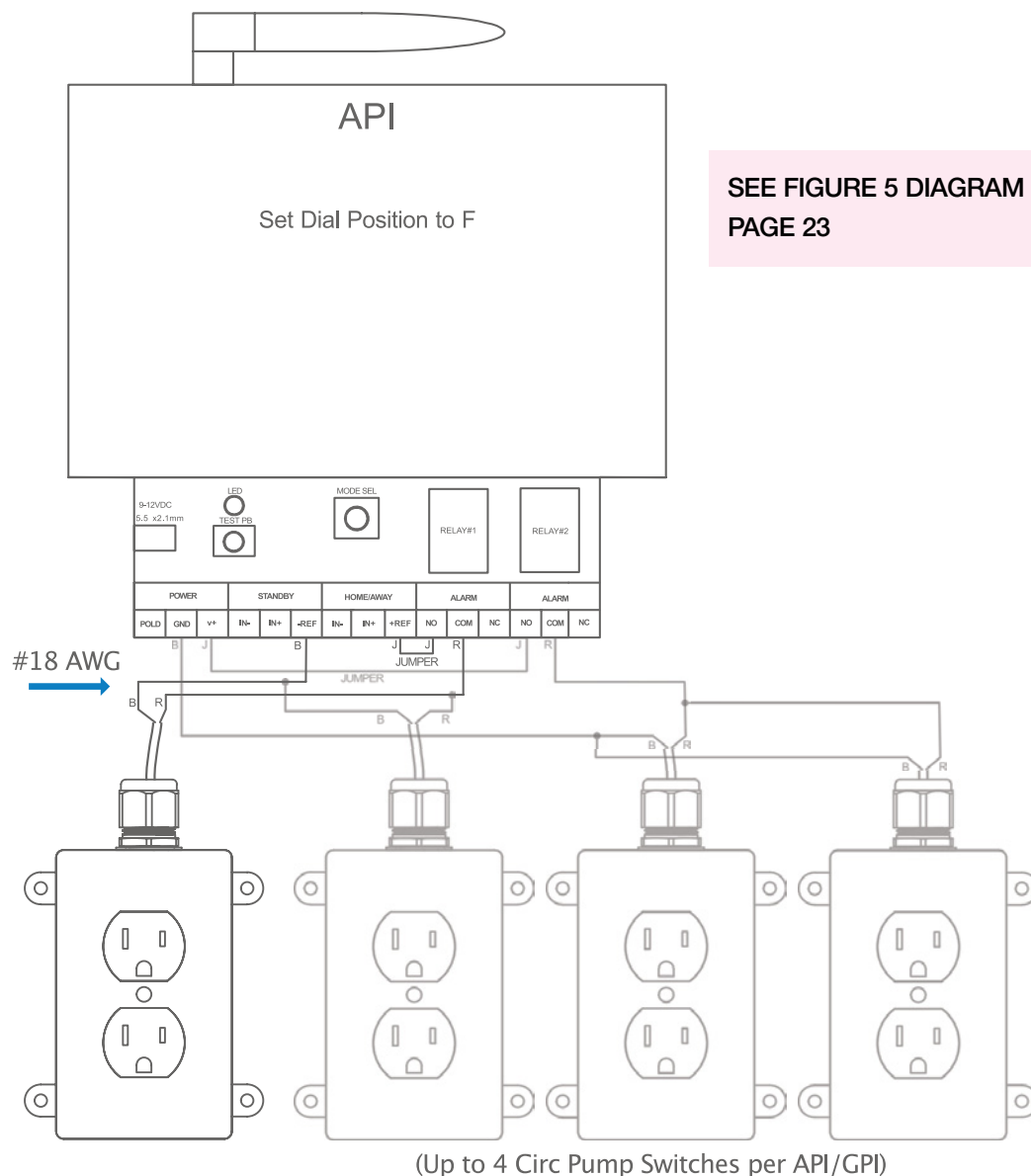Please call our office at 1.866.410.1134 – 8:00am to 5:00pm Pacific Time

API INSTALLATIONS

Recirculation Pump Switch to API

This wiring application is typical when a customer desires their hot-water recirculation pump to shut off during a leak, so the pump doesn't continue to push water making the leak worse, or alternatively to save the pump from burn out due to pumping with no water in the system.

On the API, place the provided jumper wire between +REF and the NO terminal of one of the relays on the API. Connect the red wire from the recirculation pump switch to COM of the same API relay. Finally, connect the black wire from the recirculation pump switch to -REF or GND on the API.

Note 1: This applies a 12-volt signal to the switch inside the recirculation pump switch, to open a normally-closed switch, shutting off power to the recirculation pump.

SEE FIGURE 5 DIAGRAM
PAGE 23

API

Set Dial Position to F

9-12VDC 5.5 x2.1mm

LED
TEST PB

MODE SEL

RELAY#1

RELAY#2

POWER			STANDBY			HOME/AWAY			ALARM			ALARM		
POLD	GND	v+	IN-	IN+	-REF	IN-	IN+	+REF	NO	COM	NC	NO	COM	NC

JUMPER

JUMPER

#18 AWG

(Up to 4 Circ Pump Switches per API/GPI)

API INSTALLATIONS

Wiring Instructions for a PAM-1 Relay (Irrigation Control Interface Wiring)

• Connect the blue wire from the PAM-1 to IN- (below STANDBY) on the API.

• Connect the orange wire from the PAM-1 to –REF on the API.

• Place a jumper wire from IN+ (below STANDBY) to +REF on the API.

• Connect the red wire from the PAM-1 to the MV/P (master valve/ pump) terminal on the irrigation controller.

• Connect the white wire from the PAM-1 to COM on the irrigation controller.

• The yellow arrow dial on the API should face F.

• When irrigation starts, you should see the Leak Defense System control panel switch from Home or Away to Standby. When irrigation stops, the Leak Defense System should go back to Home or Away.

Note: This applies a 12-volt signal across the IN- and IN+ (below STANDBY) terminals on the API, while the irrigation system is running. You may be able to start irrigation manually to test that this connection is functioning properly.

SEE FIGURE 6 DIAGRAM
PAGE 24
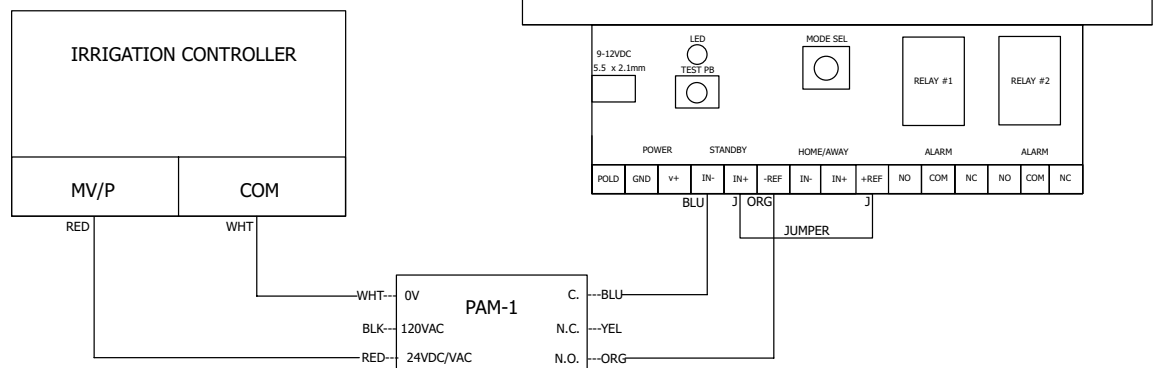
Figure 1
General Piping Diagram

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8:00am to 5:00pm Pacific Time

FLOW

Utility Curb
Stop &
Shut Off
Valve

Municipal
or Well
Water
Supply

Water Meter

Fire Sprinkler
shut off valve

To Fire Sprinkler System
(If Present)

FLOW

FLOW

Irrigation
shut off valve

To Irrigation System
(If Present)

FLOW

Primary shut off valve
for house/building

Pressure
Reducing
Valve

FLOW

Recommended location of
**booster pumps, water
storage tanks or water
softener, conditioner,** or **filter
system** like the **Sentinel H20**

**SPRING
CHECK VALVE**

LF

PN 40

Transformer to
120 v. ac outlet

LEAK DEFENSE

Water to House/
Building

FLOW

Figure 2

Connecting a Four-Hour
or Six-Hour Timer to
the LDS API
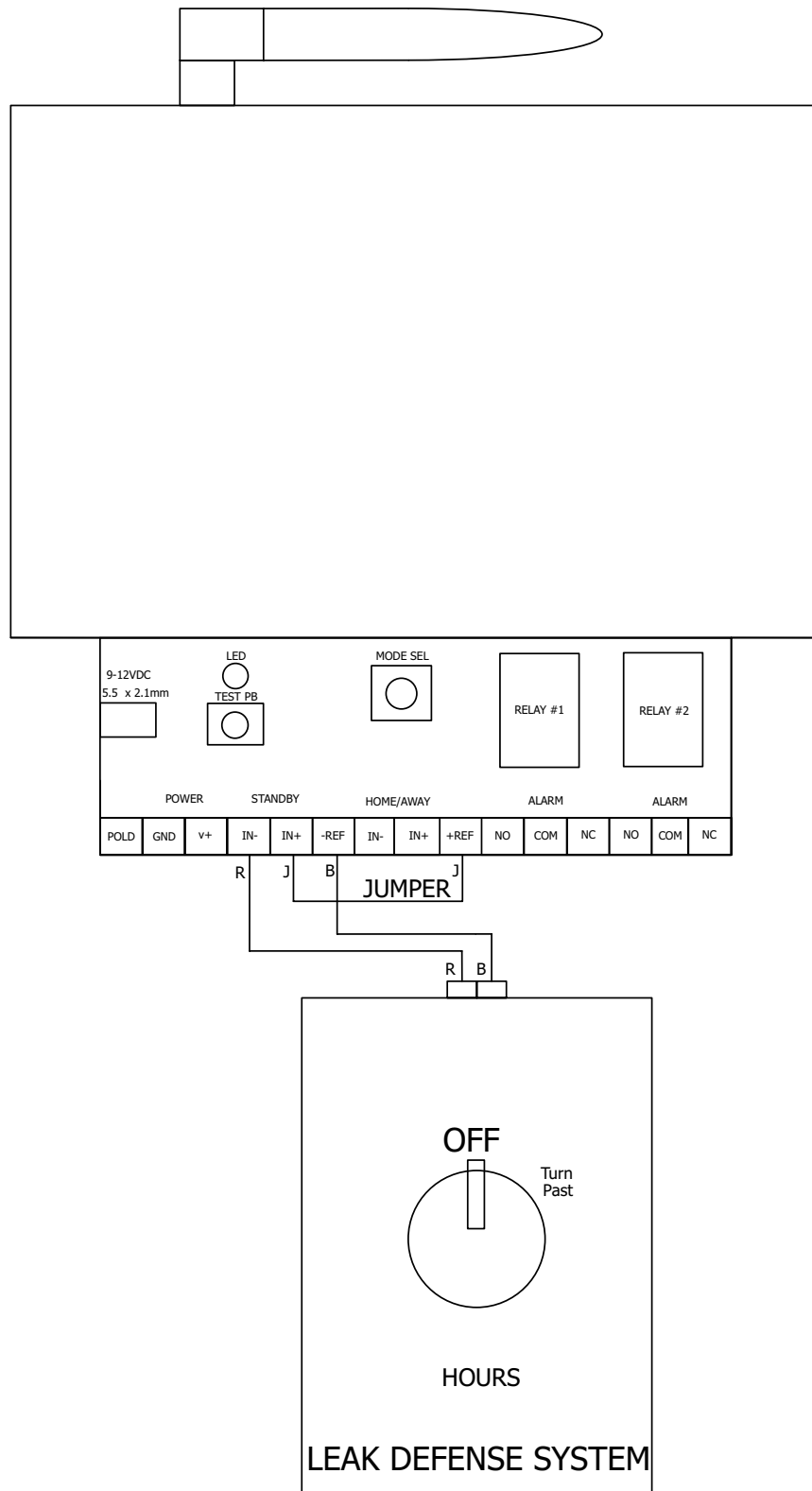
POLD	GND	v+	IN-	IN+	-REF	IN-	IN+	+REF	NO	COM	NC	NO	COM	NC

9-12VDC
5.5 x 2.1mm

LED
TEST PB

MODE SEL

RELAY #1

RELAY #2

POWER   STANDBY   HOME/AWAY   ALARM   ALARM

R   J   B   JUMPER   J

R   B

OFF

Turn
Past

HOURS

LEAK DEFENSE SYSTEM

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Figure 3
Connecting SS Relays to API

240VAC OUTLET

HOT #1 (H1)
HOT #1 (H2)
NUETRAL (N)

WELL PUMP

N

H1

H2

SOLID STATE RELAY #1

SOLID STATE RELAY #2

H1

H1

H2

H2

1 | 240VAC OUTPUT 50A | 2

4 | INPUT 3-32VDC | +3

J

R

B

J

JUMPER

9-12VDC
5.5 x 2.1mm

LED
TEST PB

MODE SEL

RELAY #1

RELAY #2

POWER | STANDBY | HOME/AWAY | ALARM | ALARM

| POLD | GND | v+ | IN- | IN+ | -REF | IN- | IN+ | +REF | NO | COM | NC | NO | COM | NC |

B

J | J | R

JUMPER
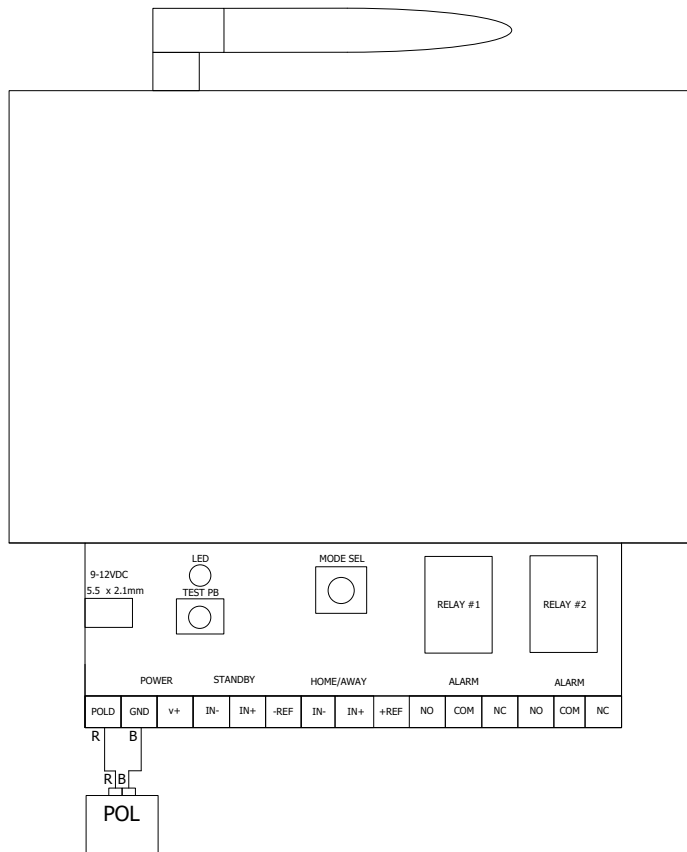
Figure 4
Connecting External
Alarm Inputs to API

9-12VDC
5.5 x 2.1mm

LED
TEST PB

MODE SEL

RELAY #1

RELAY #2

POWER | STANDBY | HOME/AWAY | ALARM | ALARM

| POLD | GND | v+ | IN- | IN+ | -REF | IN- | IN+ | +REF | NO | COM | NC | NO | COM | NC |

R | B

R | B

POL

Figure 5

Connecting a Recirculation Pump
Switch to API

(Up to 4 Circ Pump Switches per API/GPI)

FOR TECHNICAL SUPPORT:
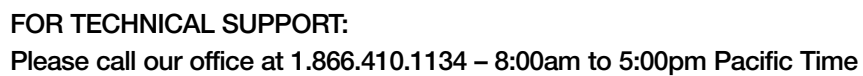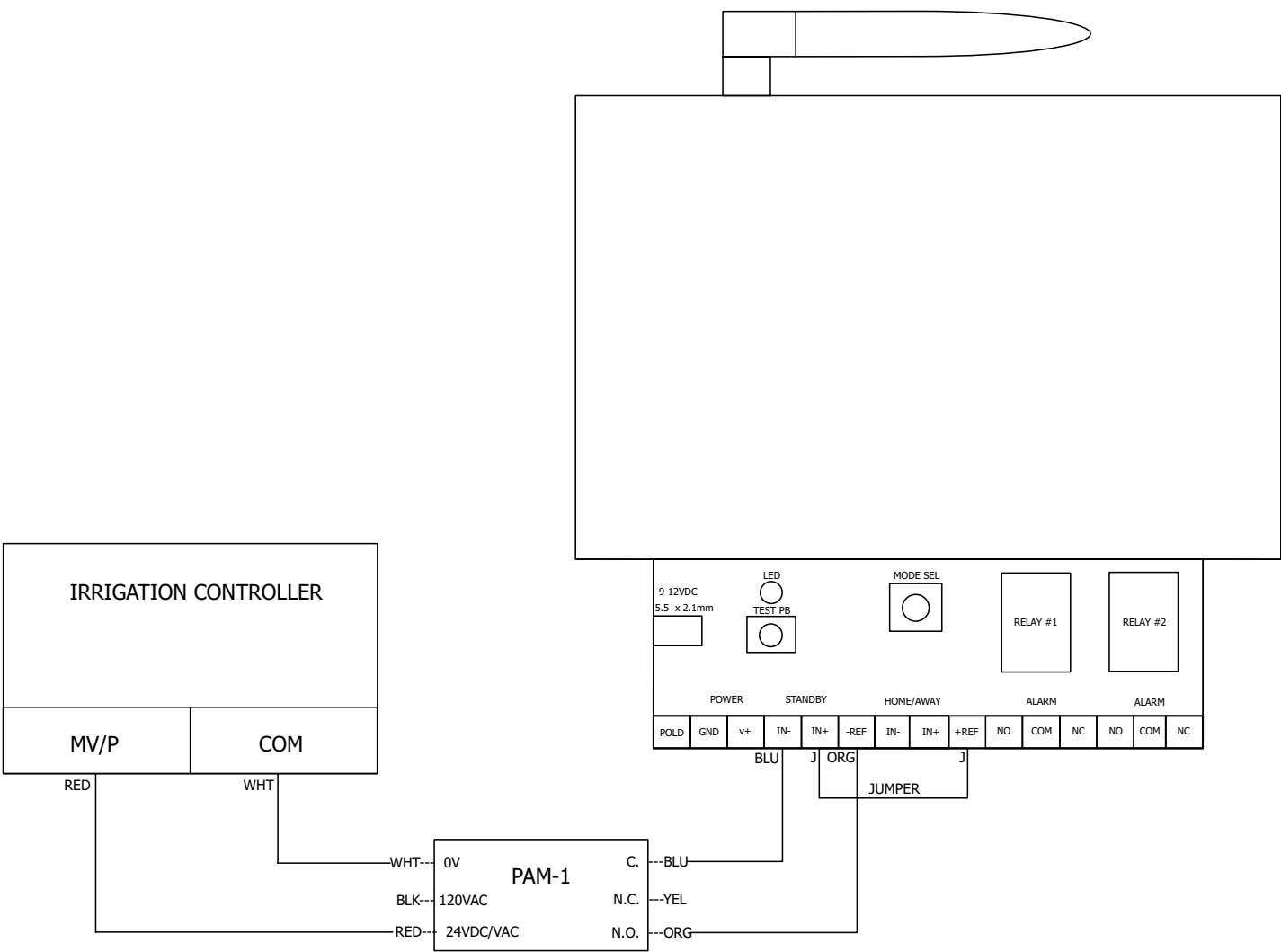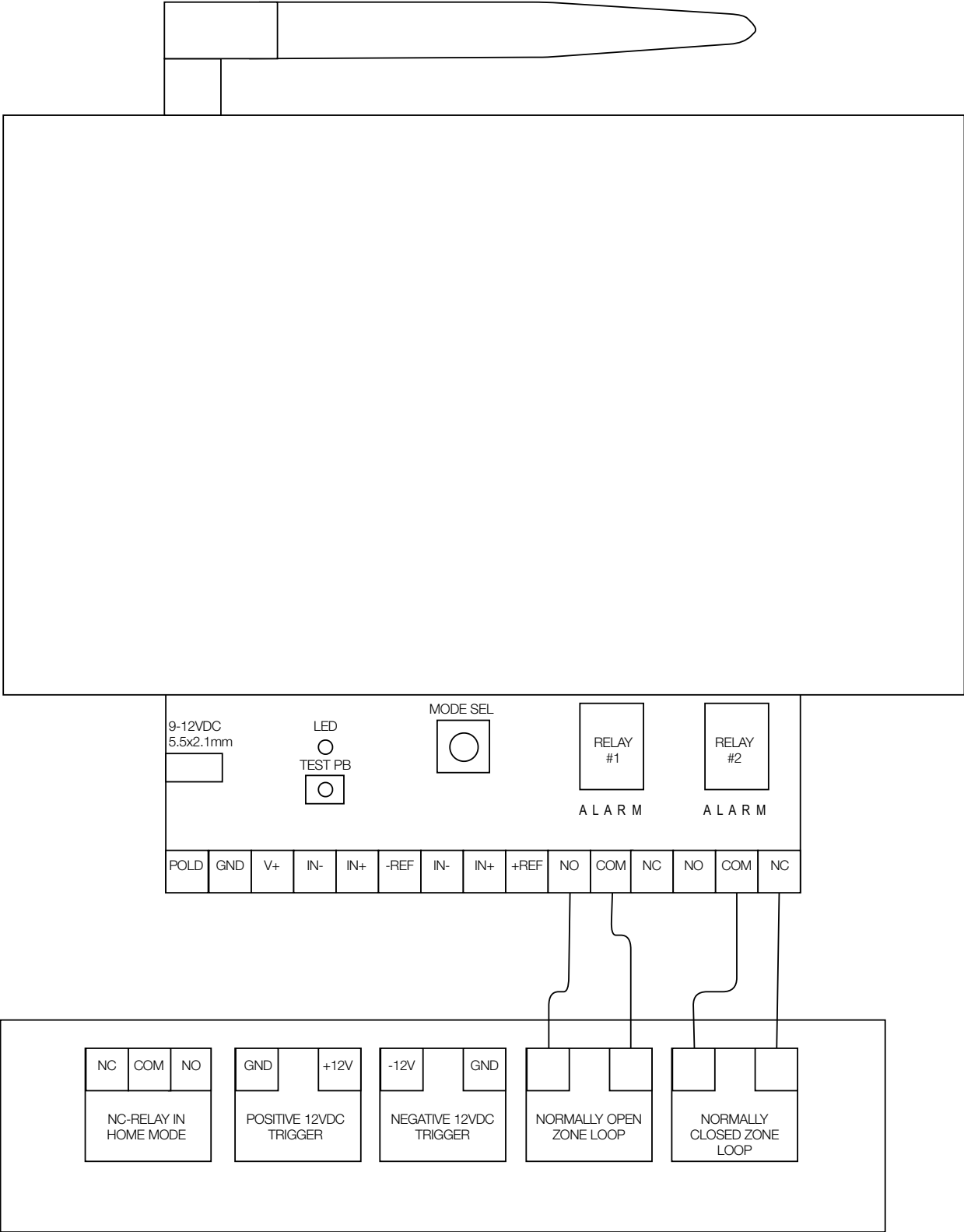Please call our office at 1.866.410.1134 – 8:00am to 5:00pm Pacific Time
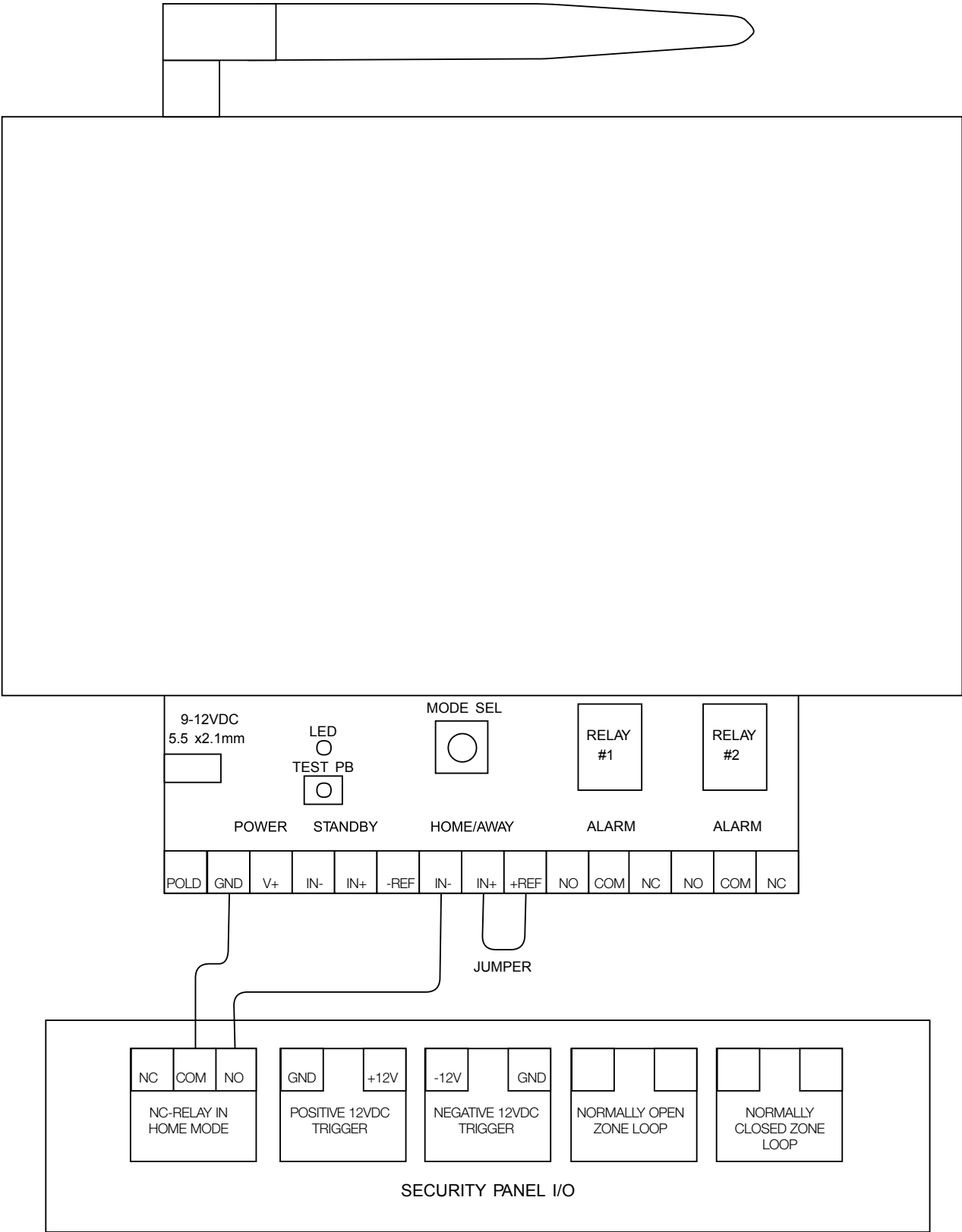
Figure 6

Wiring Instructions for a PAM-1 Relay

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Figure 7

Zone Loops from Security System to API

| POLD | GND | V+ | IN- | IN+ | -REF | IN- | IN+ | +REF | NO | COM | NC | NO | COM | NC |

9-12VDC 5.5x2.1mm

LED
TEST PB

MODE SEL

RELAY #1
A L A R M

RELAY #2
A L A R M

NC	COM	NO
NC-RELAY IN HOME MODE		

GND		+12V
POSITIVE 12VDC TRIGGER		

-12V		GND
NEGATIVE 12VDC TRIGGER		

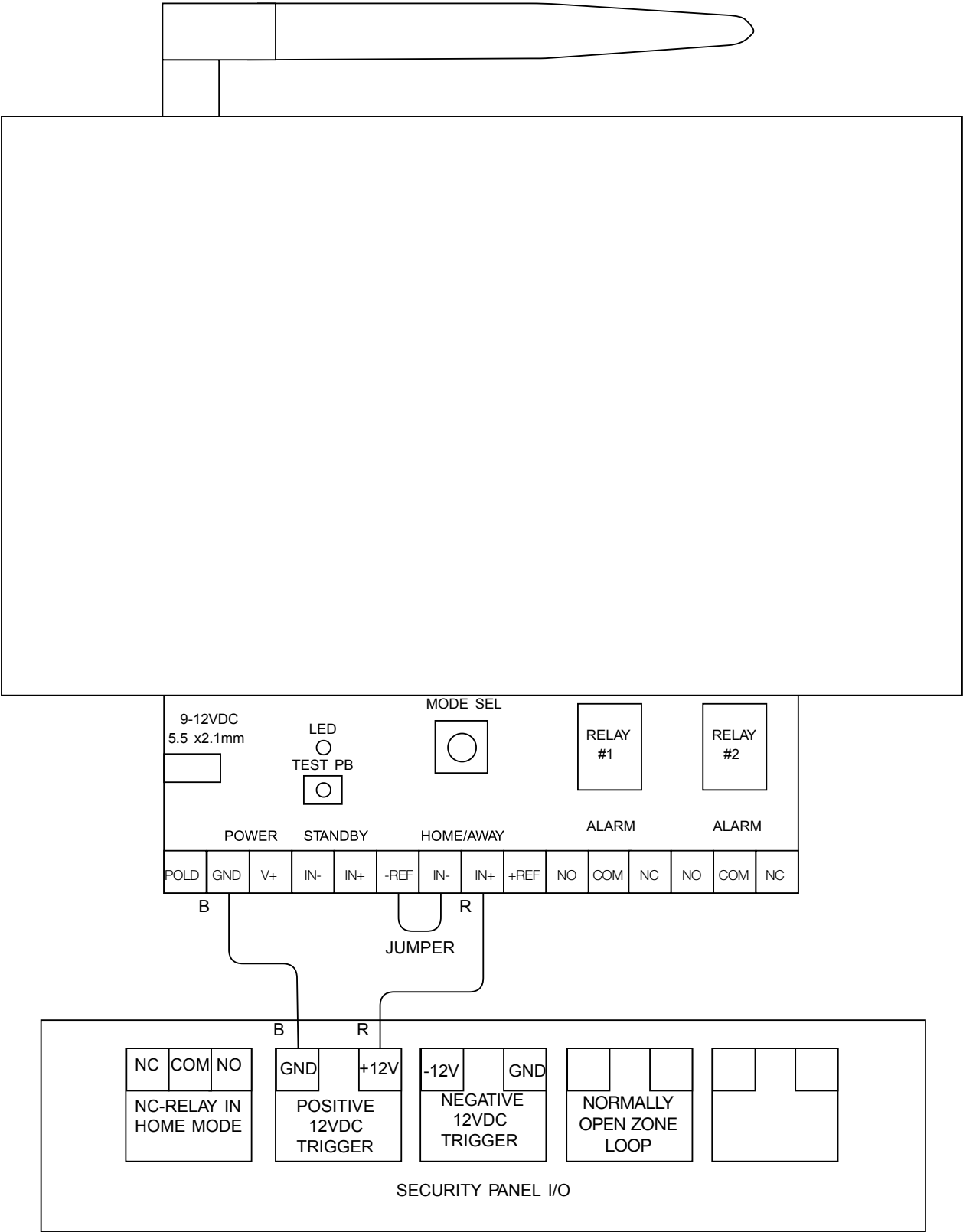NORMALLY OPEN ZONE LOOP

NORMALLY CLOSED ZONE LOOP

FOR TECHNICAL SUPPORT:
Please call our office at 1.866.410.1134 – 8:00am to 5:00pm Pacific Time
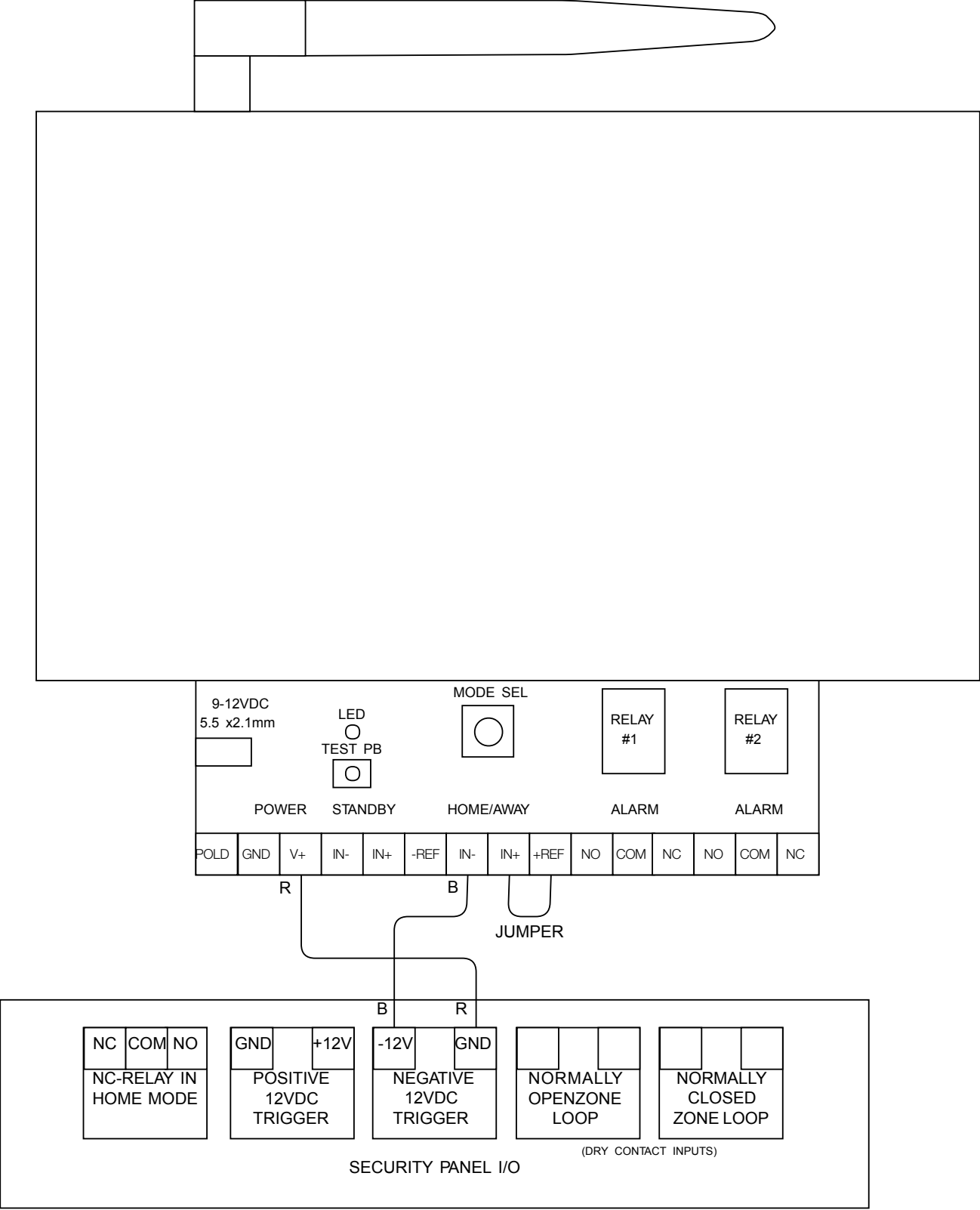
Figure 8

Relay Trigger from Security System to API

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Figure 9

Positive Trigger from Security System to API

		POWER		STANDBY		HOME/AWAY			ALARM			ALARM		
POLD	GND	V+	IN-	IN+	-REF	IN-	IN+	+REF	NO	COM	NC	NO	COM	NC

9-12VDC 5.5 x2.1mm

LED

TEST PB

MODE SEL

RELAY #1

RELAY #2

B   R

JUMPER

B   R

NC	COM	NO	GND	+12V	-12V		GND
NC-RELAY IN HOME MODE			POSITIVE 12VDC TRIGGER		NEGATIVE 12VDC TRIGGER		

NORMALLY OPEN ZONE LOOP

SECURITY PANEL I/O

FOR TECHNICAL SUPPORT:
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Figure 10
Negative Trigger from Security System to API

	POWER			STANDBY		HOME/AWAY				ALARM			ALARM	
POLD	GND	V+	IN-	IN+	-REF	IN-	IN+	+REF	NO	COM	NC	NO	COM	NC

9-12VDC
5.5 x2.1mm

LED
TEST PB

MODE SEL

RELAY #1

RELAY #2

R   B

JUMPER

B   R

NC	COM	NO	GND		+12V	-12V		GND						
NC-RELAY IN HOME MODE			POSITIVE 12VDC TRIGGER			NEGATIVE 12VDC TRIGGER			NORMALLY OPENZONE LOOP			NORMALLY CLOSED ZONE LOOP		

(DRY CONTACT INPUTS)

SECURITY PANEL I/O

FOR TECHNICAL SUPPORT:
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Figure 11

Connecting Water Softener (micro switch) to
API (Standby trigger)

API

Set Dial Position to F

| | LED | | MODE SEL | | | |
| TEST PB | | | | RELAY #1 | | RELAY #2 |

9-12VDC
5.5 x 2.1mm

	POWER		STANDBY			HOME/AWAY			ALARM			ALARM		
POLD	GND	v+	IN-	IN+	-REF	IN-	IN+	+REF	NO	COM	NC	NO	COM	NC

R   J   B   JUMPER   J

R   B

Micro Switch circuit from
water softeners
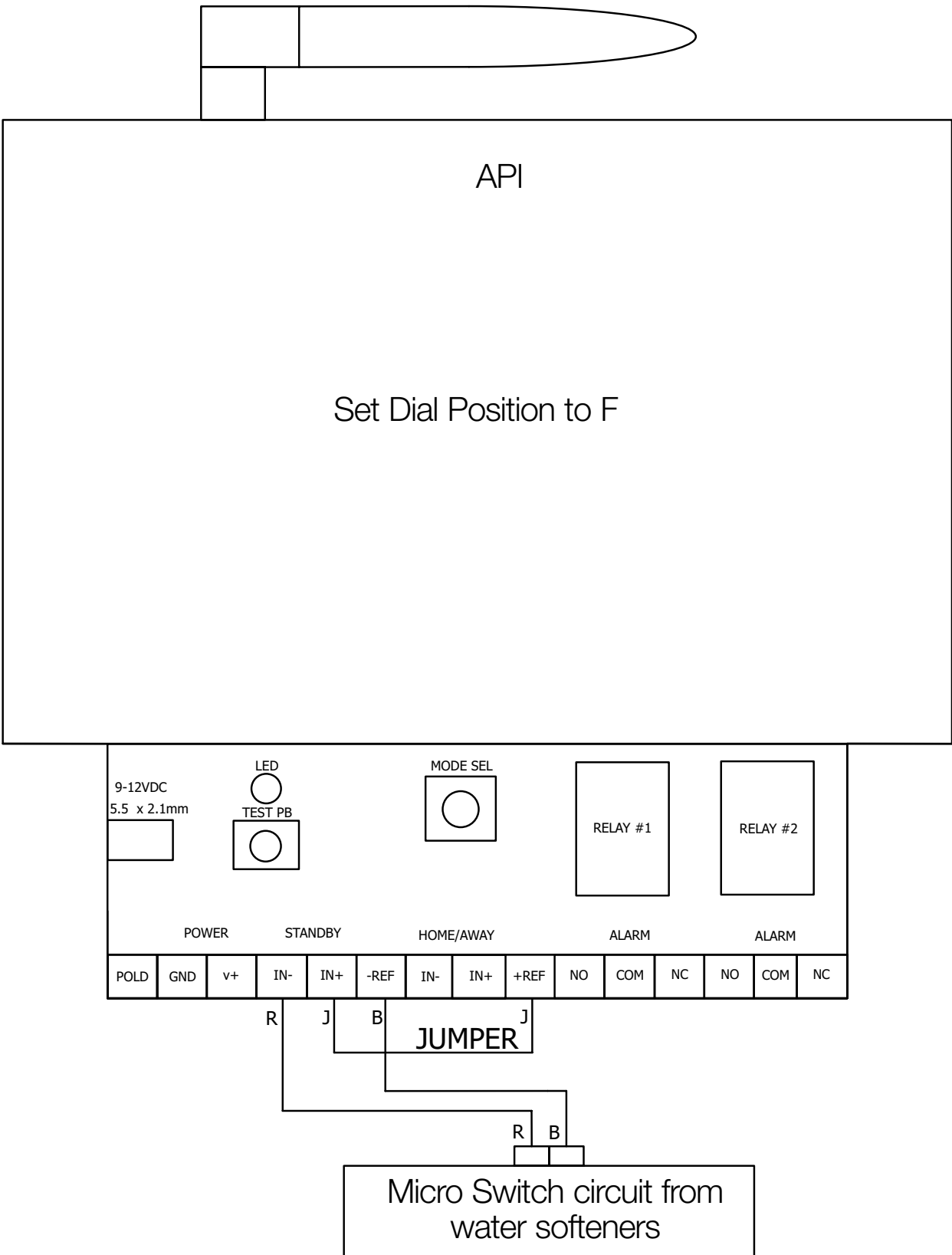
Figure 12

Connecting Water Softener (clack) to API (Standby trigger)
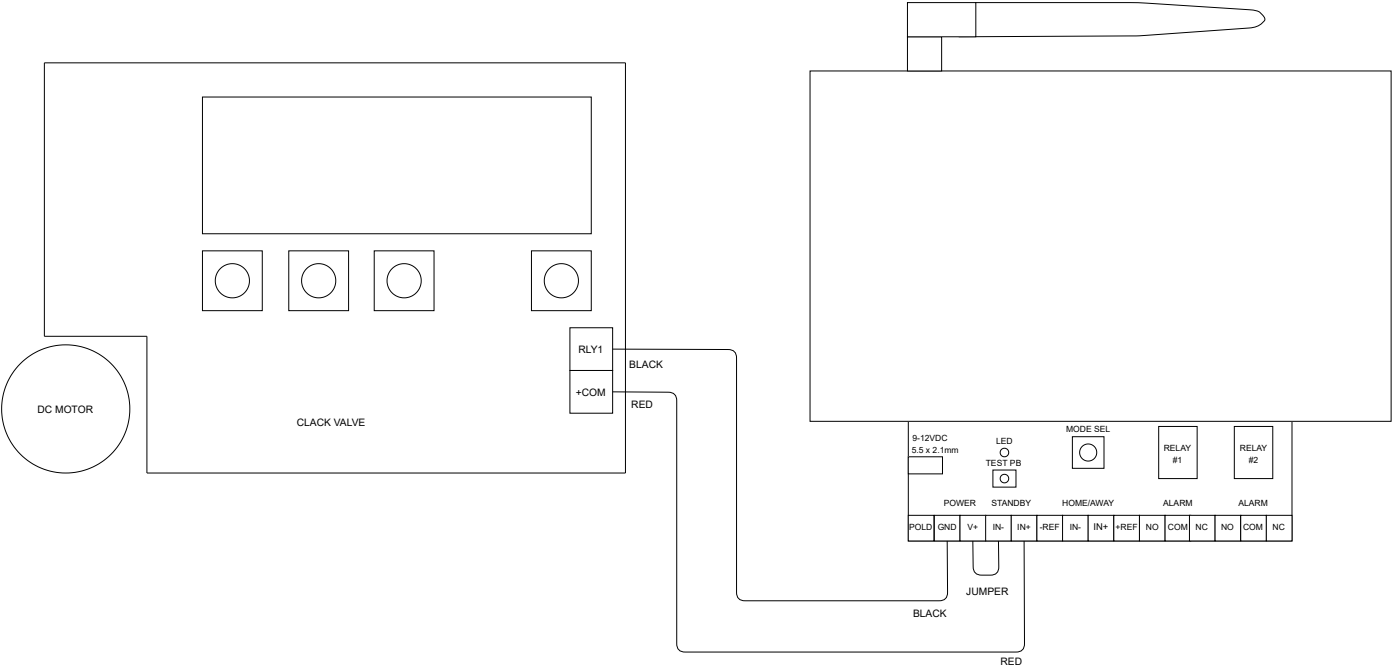
Figure 13

General System Layout

(Optional for Consideration)

All-Purpose Interface (API) for alarm monitoring or connecting to external moisture sensors

All-Purpose Interface (API) for Recirc Pump

HOT

Control Panel

Recirculation Pump

Circ Pump Switch

Expansion Tank

COLD

HOT

Water Heater

Leak Defense System

Point of Leak Detector (POLD)

Spring Check Valve

OWNER'S MANUAL: CONTROL PANEL

Current Flow (%)
Water Temperature
Notifications
WiFi Signal Strength
Menu
Identities/Changes Active Scene
Turn Water On/Off
Time to Alarm
Time until LDS Alarms
Trip Rate

Water — 65°F — 1% Flow — On — 32°F — Scene — Home — 30 min — 10%

Scene Button:		Allows switching between the following Scenes: Home 🏠, Away 🏃, & Standby 🚰
		WARNING putting the Leak Defense System into STANDBY may allow a leak to go undetected as it is ignoring all water flowing
Water Button:	💧	Tapping the **Water** button allows you to **Turn Water On/Off**
Time to Alarm Icon:	🕐	Tapping the **Time to Alarm** icon allows you to set the amount of time water can flow before the Leak Defense alarms in either the **Home** or **Away** Scene. Changing this while in **Standby** remaining before **Standby** ends
Trip Rate Icon:	🕐	Tapping the **Trip Rate** icon allows you to set the percentage amount of water that can flow before the Leak Defense begins its **Alarm Countdown**. This icon is not visible or changeable while in **Standby**
Flow Arc:	1% Flow	Tapping the middle of the circular flow graph brings up a menu with options to **Turn Water On/Off**, change Scenes, and adjust the **Trip Rate** and **Time to Alarm** as well as check the Status of the system
Menu Icon:	≡	Tapping the **Menu** button allows you check WiFi settings, see connected Devices, see **Advanced** Settings, and see the **Help** screen
Notification Icon:	🔔	Will turn YELLOW if there is an issue. Shows numerous connection statuses
Scene Scheduling Icon:	☁	Shows if a **Scene Schedule** is running via web (set up through catchaleak.com or mobile app)
Override by API Icon:	🖥	Shows if the current Scene is being set by an **API** or **GPI** (via 4-Hour Timer, Security system, Irrigation timer, Pool fill interface, etc). Will be blue for **Away** scene, orange for **Standby**
Low Water Temp Icon:	🌡↓	Shows if **water temperature** falls below the predefined low temp threshold (default = 1°C)
High Water Temp Icon:	🌡↑	Shows if **water temperature** exceeds the predefined high temp threshold (default = 80°C)
Low POLD Battery Icon:	🔋	Shows if the panel detects a **POLD low battery** signal. Note: If POLD is out of range or battery has dropped below operating voltage, no alert will be received
WHEN LDS ALARMS:		When the LDS alarms you will see a red screen indicating the reason why the water has been shut off
		Press **Silence** to silence the alarm sound while you check for leaks
		If the cause of the alarm is known, press **Clear Alarm** to turn off alarm sound and follow the prompt to turn your water back on

Notice: If a Point of Leak Detector (POLD) is the cause of the alarm, the alarm condition must be cleared from the POLD before clearing the alarm on the Control Panel.

OWNER'S MANUAL: CONTROL PANEL

Using the Control Panel

The control panel screen will normally be dim. Touch the screen anywhere to make it light up. After a period of inactivity the panel will return to dim state. At the main screen you will see a flow arc that will indicate how much water is flowing.

Scene
This button allows you to switch your Leak Defense System from **Home** 🏠 Scene to **Away** 🏃 Scene when you are leaving the house or to **Standby** 🚰. **Standby** can be used when filling a pool or contractors are working on the house to avoid unnecessary alarms. The icon in the box and color of the icons indicates what Scene you are currently in. Home is GREEN, **Away** is BLUE, and **Standby** is ORANGE.

When you are leaving the house, touch the screen and the Main Screen should be displayed.

If the **Home** Scene is selected, tap the **Scene** button and then tap the **Away** button.

Turn off water
The **Water** button will allow you to shut the water off to your home. Press this button and when asked "Turn Water Off?" tap **Yes**. The valve will close and the **Water** icon 💧 will turn GREY. When fully closed the Water icon 🚫 will be YELLOW with a slash through it.

To turn water back on, simply tap **Water** again and when asked "Turn Water On?" tap **Yes**.

Program the system

Allows the user to customize the system settings. The **Time to Alarm** 🕐 and **Trip Rate** functions will need to be programmed in both the **Home** and **Away** Scenes when the Leak Defense System is first activated but these settings may be changed or adjusted at any time.

With the **Home** 🏠 Scene selected you can program the **Time to Alarm** and **Trip Rate** functions. These will allow you to program the time water can continuously flow when you are home and the **Trip Rate** allows you to set the sensitivity you desire.

With the **Away** 🏃 Scene selected you will be able to set the **Time to Alarm** and **Trip Rate**. This will allow you to program the time water can continuously flow while you are away. You can also program the **Trip Rate**.

OWNER'S MANUAL: CONTROL PANEL
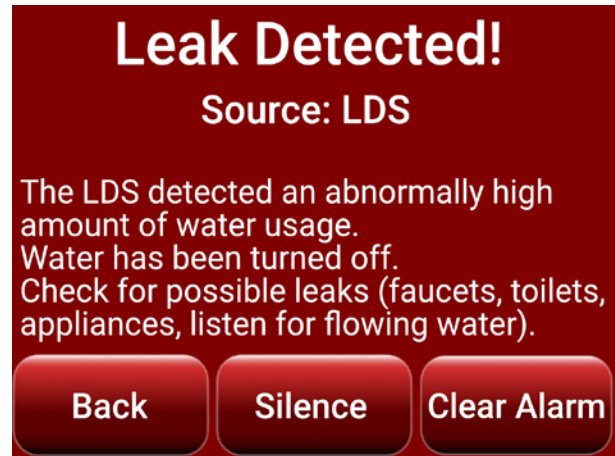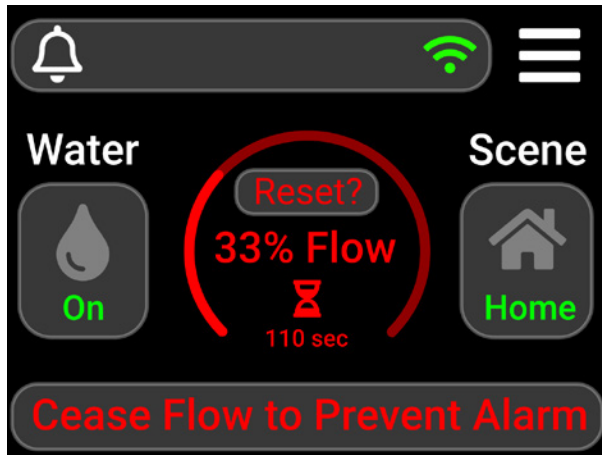
Warning Cycle Feature

In the **Home** 🏠 Scene, all Leak Defense Systems have a built in warning mechanism that will let you know that you have exceeded the **Time to Alarm** ⏱ setting and water is about to be turned off.

When you reach the **Home Time to Alarm**, the system turns the water off for 30 seconds and then re-opens the valve to check to see if water is still flowing. If the water has stopped flowing it resets the alarm clock. If water is still flowing it alarms and shuts off the water.

So, if you are running water and notice that the water flow is significantly reduced or stopped, you will need to turn off the running water for about 60 sec. This will give the system time to turn the water back on and to confirm there is no water flow, and that there is not a leak and will return to normal, resetting the Time to Alarm clock. If the system still sees flow, it will assume it is a leak and will turn off water completely. You can go to the control panel at any time and push the Reset or Clear Alarm button indicating that the flow is normal and reset the system.

The **Warning Cycle** is not available in the **Away** 🏃 Scene, as the system assumes no one is home and shuts the water off immediately once the time to alarm is reached. This feature is only available in the Leak Defense System.

The Alarm Started Sounding and I am Home. What Should I Do?

If the water flow is due to a routine activity that normally occurs within your household:

You may want to adjust the Leak Defense System settings. If so, you will first select **Clear Alarm** and then select **Turn Water On**. You can then:

1) Increase the **Time to Alarm** ⏱ setting or

2) Increase the **Trip Rate** ⟳ setting

If you are filling your swimming pool, watering your lawn for an extended time, or running water for some other reason, do the following after selecting Clear Alarm and Turn Water On:

Tap the **Scene** button and select **Standby**. Tap the **Time** ⏱ icon and enter the amount of time desired for the system to remain in **Standby** in minutes (Max is 48 hours or 2880 minutes). Tap the top-right box to confirm the time.

If there is nothing unexpected happening:

If you don't believe your water settings are set too conservatively, you will want to check for a leak.
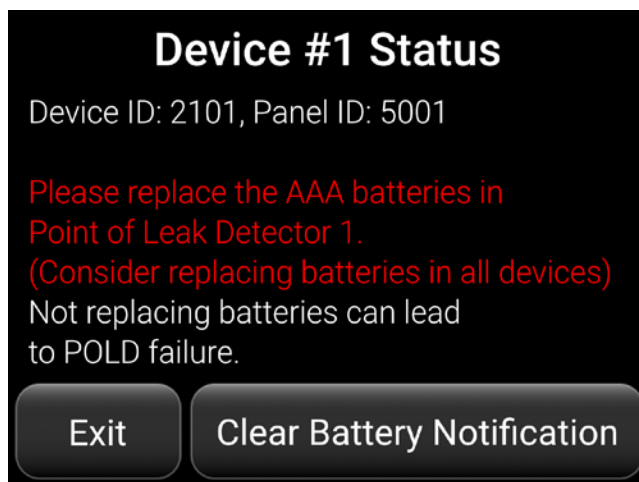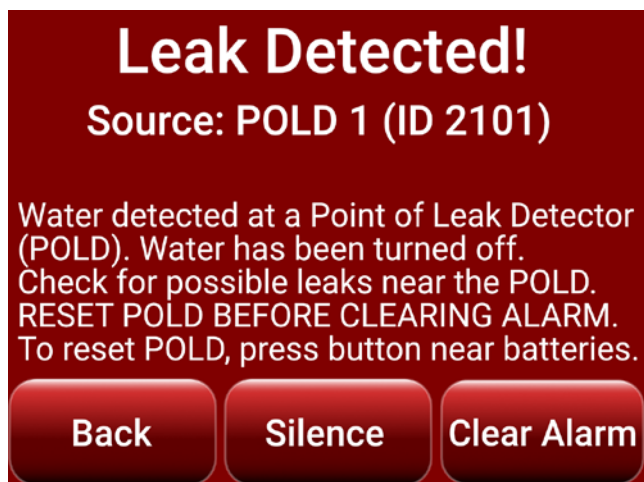
Clearing POLD Alarms

Step 1: Verify which POLD is alarming

- Check which POLD is in alarm based on the Source number shown on the Control Panel, or open the Leak Defense mobile app to view the custom name you gave the POLD during setup.

- Locate the Point of Leak Detector (POLD) that is in alarm by listening to its chirp.

Step 2: Clear the alarming POLD

The unit should self-clear once the sensors are dry. If this does not happen, open the battery compartment on the POLD and press the reset button for 1-3 seconds until silent (or remove and re-insert one battery).

NOTE: For non-standard mesh style cable, if the Water Detection Cable is still wet, you may need to remove the batteries for 24-48 hours until it dries. If the POLD is still going into alarm after being allowed 48 hours to dry, please call Sentinel Hydrosolutions.

Step 3: Clear Alarm on the Control Panel

- Once the cause of the alarm is identified and handled, you may press the Clear Alarm button on the control panel. This should proceed to a screen indicating if the water is off.

- If the system alarms again, check the POLD # after the word "Source:" on the Control Panel to see if it matches the POLD that was cleared. If it is different, repeat Step 1 & 2.

NOTE: The alarm condition must be cleared from the POLD before you can clear the alarm on the Control Panel.

NOTE: Batteries should be replaced in regular intervals and after alarms to ensure full power.

How & When to Change POLD Batteries

Step 1: Verify which POLD has a low battery

- When a POLD has low batteries, it will periodically chirp.

- This can be verified by tapping on the control panel to wake it up. There will be a low battery indicator in the top section of the panel. Tap this icon to view details.

Step 2: Replace the batteries

- With the antenna facing away from you, the battery that is on the left should have positive (+) facing away from you. The battery that is on the right should have positive (+) facing toward you and away from the reset button

NOTE: Verify that batteries are installed properly by tapping the reset button and ensuring the LED lights up and is solid
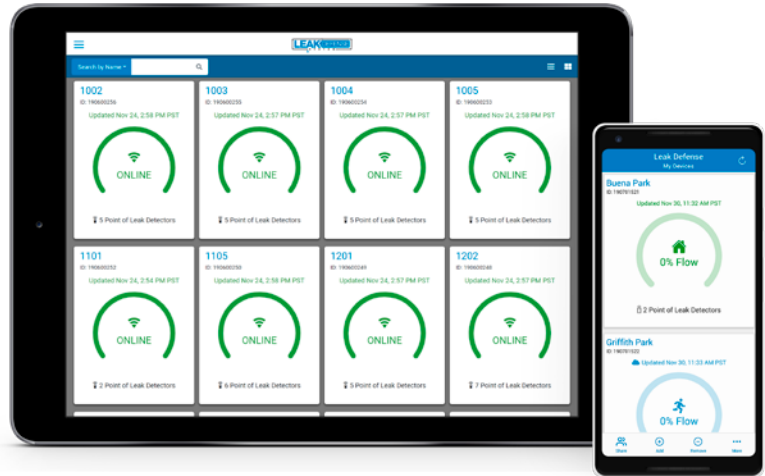
Step 3: Clear alert on the Control Panel

- Press the low battery indicator on the Control Panel and follow the on-screen steps to clear the alert on the panel

Set Up WiFi
Web-Based App

Compatible with most 2.4 GHz networks

WiFi

First connect to your WIFI access point

- Tap the Menu ≡ icon on Leak Defense Panel

- Tap WiFi 📶 (can also be done from the main screen)

- Tap View Networks and highlight your access point

- Tap Select and enter your password

- Tap ✔ twice and your panel will ask you to Save Changes

- Tap Ok

The WiFi 📶 icon on the main screen will be GREY while it attempts to connect. If successful, the icon will turn GREEN. If unsuccessful it will turn RED

- *If an incorrect password or access point is entered into the control panel you should go through the steps again and select the correct router and password*

- *Router security/settings may restrict WiFi connection to the LDS. A separate access point may need to be purchased.*

Web-based access

On your phone or laptop go to www.catchaleak.com or download the **Leak Defense** App from the IOS or Android Store

- Click on REGISTER AS A NEW USER

- Fill out the form including the DEVICE ID that was supplied with your system. Click on REGISTER. You should get a notice thanking you for registering

- You will immediately receive an email with a link and/or a text to which you will have to reply with a confirmation number. (Check your junk email)

- If on www.catchaleak.com, close it and reopen

- Log in with your email address and password you selected

- You will see a tile with a flow arc for each device you have registered

- Selecting a device gives you access to control that device

- You can switch from **Home** to **Away** or **Standby**

- You can also adjust the **Trip Rate** and the **Time to Alarm**

- You can also schedule times for your system to automatically change scenes between **Home** and **Away**

OWNER'S MANUAL: CONTROL PANEL

Fine-tuning to Your Lifestyle

The Leak Defense System is designed to minimize the chance of a leak in your home from becoming a catastrophic flood by catching and stopping a leak as early as possible.

The System has two basic modes, the **Home** 🏠 scene and the **Away** 🏃 scene. Each of these scenes has two variable settings, the **Time to Alarm** 🕐 and **Trip Rate** 🔄. Understanding these settings will enable you to make the correct decisions to maximize the protection of your home against water damage.

Home Scene 🏠

In the **Home** scene the default setting for the **Time to Alarm** 🕐 is set to 20 minutes and the **Flow to Alarm (Trip Rate)** 🔄 is set to 10%. This means that water must flow continuously for 20 minutes above a trip rate of 10% for the system to alert. At any point when the **Trip Rate** drops below 10% the clock resets.

These settings can and should be adjusted to conform to your daily water use and level of protection you desire. For instance, if you normally take a 15 minute shower you should set the time to alarm to 20 minutes or more. If you have an active home you may need to set your time to alarm to 45 minutes or longer. A key point to remember is that dishwashers and washing machines may run for an hour or more, but they only pull water for a few minutes.

One way to determine exactly where to set the flow is to partially open a faucet and then look at the flow arc to see what percentage that flow is. Continue to close the faucet and compare the flow rate at the faucet with the flow rate displayed on the flow arc. This will help you to decide where you want to set the **Trip Rate**. If you are concerned with very small leaks you should set the **Trip Rate** as low as possible (2 or 3%) without the system alarming.

The first few weeks after installation the system may alarm. Be aware that these are not "false alarms." If the system goes off, water is/was flowing somewhere in your home. For the first time you now have the ability to know when water is flowing in your home with this system. Adjusting your **Time to Alarm** and **Trip Rate** will allow you to optimally protect your home and not have nuisance alarms, the combination most people are looking for.

Away Scene 🏃

In the Away scene, the default setting is 3 minutes for the **Time to Alarm** 🕐 and the **Trip Rate** 🔄 is 10%. Here again, if you are concerned with very small leaks you should adjust the **Trip Rate** to as low as possible without the system alarming. Most people end up with a **Trip Rate** of 7% or less and 3-5 minutes **Time to Alarm** in the **Away** scene.

If an accessory like a flow switch, relay or timer has been added to put the Leak Defense System into the **Standby** scene for any reason, during that time the house is unprotected. When in the **Standby** scene, the Leak Defense System does not monitor water flowing and may allow a leak to go undetected. It is always preferred to separate pool and irrigation feeds from the house supply line. Please make sure all users and owners of the Leak Defense System are made aware of this. Contact our office if you have any questions.

Need Help?

Unsure how to change the settings to your preferences? No problem! Just give us a call and we'll happily walk you through it over the phone. **Feel free to call us from 8am - 5pm Pacific Time at (866) 410-1134, ext. 2**

We hope these tips are helpful. Please complete your Warranty Card included with your system or complete the on-line form at www.leakdefensesystem.com/warranty if you prefer.

LEAK DEFENSE SYSTEM LIMITED WARRANTY

Warranty Period:

The manufacturer warrants its products that are sold and installed in the United States to be free of defects in materials and workmanship under normal use and service for a period of two (2) years from the date of purchase by the end user.

Warranty Coverage:

The manufacturer's obligations shall be limited within the warranty period, at its option, to repair or replace the product or any part thereof. In order for the warranty to apply, the Leak Defense System must be installed by a licensed plumber, licensed General Contractor or approved installer. Any recommendation or referral of or to a local installer, licensed contractor or service provider Is provided as an accommodation to the end user of the product and shall not infer nor create liability or agency relationship flowing back to the manufacturer. The manufacturer shall not be responsible for dismantling and/or re-installation charges.

FOR WARRANTY CLAIMS, CONTACT SENTINEL HYDROSOLUTIONS AT
WWW.SENTINELHYDROSOLUTIONS.COM OR CALL 1.866.410.1134

Items Not Covered:

Neither the manufacturer nor the seller of the Leak Defense System shall be liable for any damage or loss whatsoever whether directly, indirectly, consequentially or otherwise, caused by the malfunction of the product or a problem arising from the installation or calibration of the product.

The product as designed will not prevent leaks; but rather it identifies possible leaks in the monitored water distribution system caused by a significant variance in water flow over time and is designed to stop the supply of water to the identifiable plumbing providing water to the structure if the flow of water exceeds the preset parameters. The manufacturer shall not be responsible for damages including but not limited to, damages for loss of profits, goodwill use or other intangible losses (even if the manufacturer has been advised of the possibility of such damages) resulting from the failure of the Leak Defense System or associated equipment.

The manufacturer does not represent that its product may not be compromised and/or circumvented, or that the product will prevent any flood or damage to property resulting from a water leak or otherwise that the product will, in all cases, provide adequate warning or protection. Particularly in structures that the manufacturer or the installer(s) are unable to clearly identify the entirety of the water distribution system.

User or owner EXPRESSLY UNDERSTANDS AND AGREES that neither the seller nor the manufacturer has control on the final use of this product, its good working condition, proper installation and its reasonable maintenance and that consequently, a properly installed and maintained system may only reduce the risk of an event involving water damage in specific circumstances:

- Damage or operational deficiencies due to water quality issues such as sediment or scale accumulation.
- Damaged caused by plumbing that is not monitored by the system.
- Replacement of house fuses or resetting of circuit breakers.
- Damage to the product caused by accident, fire, or acts of God.
- Damage caused after delivery.

The above is in lieu of all others warranties; guarantees, statements expressed or implied and the items listed are not intended to be all-inclusive but rather representative of items not covered. The warranty is limited to the express warranty set forth herein. No warranty whether express or implied shall apply beyond the two (2) year limited warranty period outlined above. Some states do not allow limitations on whether an implied warranty applies or how long an implied warranty lasts, therefore the above limitation may not apply to you. To know what your legal remedies or rights might be, consult your local state consumer affairs office or your state's Attorney General.

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LEAK DEFENSE

PRODUCT LINE CERTIFICATIONS

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

FCC ID: 2AMDU-LDS   IC: 23980-LDS   UL: E488392

LEAK DEFENSE

A WATTS Brand

USA: T: (866) 410-1134 • Sales@senthydro.com • LeakDefense.com