

# ISIMET RLA-2 Controller

## Residential Water Freeze Protection

### Installation, Operations, Start-up and Maintenance Instructions



Meets all Standards for Canadian Industrial Control Panels



#### Application:

The RLA Series Style 2 Controller is a single circuit controller used to operate remotely located 12-vdc latching solenoid(s) for domestic water services in a Residence.

This unit is provided with ISIMET latching circuit boards that permit a 24-vac signal to latch the solenoid(s) ON and OFF, controlling the water supply to the residence. Freeze Protection is provided via a temperature monitoring device that upon sensing freezing temperatures per a precise setting will operate the service solenoid to the closed position, thus turning the water supply to the residence off. Optionally, a drain solenoid would open to partially drain the service.

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**ISIMET** RLA Series Utility Controller

Installation, Maintenance, Operations, and Startup Instructions

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Patent 6,757,589 B1, 6,990,393 B2

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Although the material contained herein has been carefully reviewed, **ISIMET** does not warrant it to be free of errors or omissions. **ISIMET** reserves the right to make corrections, updates, revisions, or changes to the information contained herein.

**Warranty:**

**ISIMET** will repair or replace any defective parts or workmanship of this product for a period of one year from date of installation. The Primary Operating P.C. Board has a two year limited warranty. Damage caused by incorrect installation or improper usage is not warranted. Failure to follow recommended installation, operation, and/or maintenance procedures listed in this manual may void product warranty. Recovery rights shall be limited to the total sum of the amounts paid for the product by the purchaser.

**Limits of Liability:**

**ISIMET's** liability shall be limited to costs of repair or replacement parts. The Laboratory Service Panel and Utility Controller are not intended for usage other than those expressly described in this manual. **ISIMET** shall not be liable for damage or injury caused by the improper use of the product.

**ISIMET** does not warrant against or assume liability for failure of operation or lack of notification to secondary integrated monitoring systems. The system should be thoroughly tested and adjustments made at time of initial operation. Periodic testing should be conducted by the user to assure that all components function and operate according to specifications.

Care should be taken in the installation of this product. **ISIMET** shall not be liable for damage or injury caused from the improper installation of the product.

**Warranty is Subject to Compliance with Specific Installation Requirements.**

**EXTENDED WARRANTY:**

**ISIMET** will extend the warranty period of the products when installation complies with all start up procedures and that a factory authorized agent either performs or is in attendance during start-up of the system(s). Controllers, Companion and Accessory Panels will be extended to a period of five years from date of installation. Except for **ISIMET** FLA, DLA, RLA and other Units where automation systems are not common, Control System(s) must be interfaced with a building automation system or other **ISIMET** approved time sequencing control for "non-use" system shutdown. All operating components of the system must be **ISIMET** provided. Prescribed routine maintenance procedures must be performed per **ISIMET** recommendations.

All Start-up and Routine Maintenance Documentation shall be per Factory Recommendation.

Further, required start-up and maintenance procedures must be performed as directed upon all affected systems. This warranty shall only become enforceable upon issuance of application specific Extended Warranty Document. A copy of this document should be maintained at all times at the location of the warranted systems.

**DISCLAIMER OF IMPLIED WARRANTY:**

**THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION HEREIN. SELLER DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OF THE GOODS OR OF THE FITNESS OF THE GOODS FOR ANY PURPOSE, AND BUYER AGREES THAT THE GOODS ARE SOLD "AS IS."**

**NOTE: Only qualified craftsmen licensed within the governing jurisdiction to perform the work associated with this installation should install and/or service this equipment.**

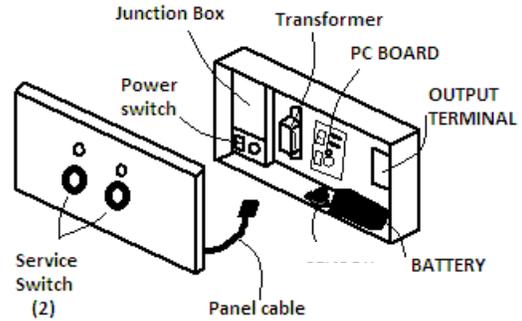
Printed in the United States

Warranty is Subject to Compliance with Specific Installation Requirements.

**Specifications:**

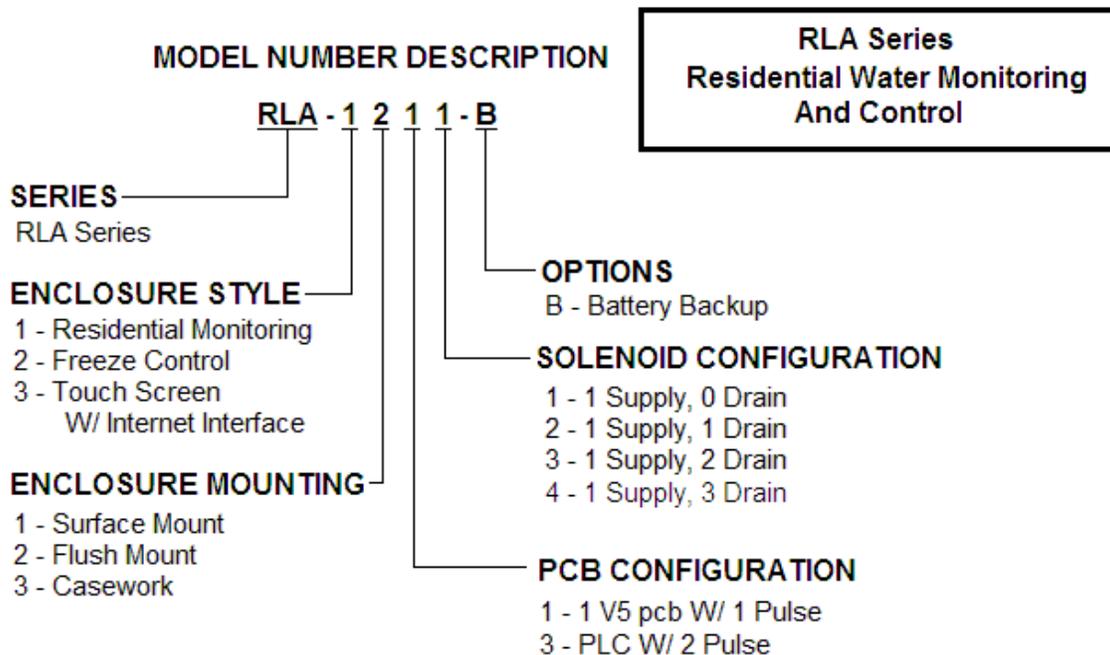
Control Panel - Stainless Steel 16 gauge  
11.875 X 18.00

Wall Box – 16 gauge powder coated sheet metal  
8.0 X 14.25 X 4.0  
\* all dimensions are in inches



Style	# Output Circuits	Trans-former	Switch\ Breaker	pcb Fuse 1	Output Rating (standard)	Pulse Output
RLA -1	1 @ 24 vac	2 amp	5 amp	2 amp	2 amp @ 24 vac	1 @ 12 vdc
RLA -2	1 @ 24 vac	3 amp	5 amp	3 amp	2 amp @ 24 vac	3 @ 12 vdc

Output fuse on PCB, FUSE 1 is Slow Blow. PCB circuit fuse, FUSE 3 is 500 mA Fast Acting

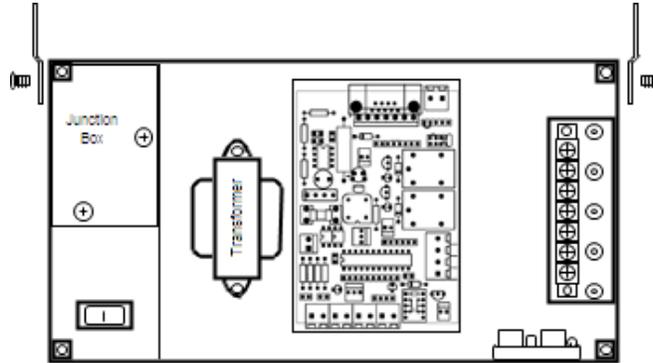


**NOTES:**

Units are intended to operate a maximum of three Latching Solenoids. These may be either Latching ON for Supply or OFF for Drain. An ISIMET ESM-100 should be ordered and then installed downstream of the supply solenoid in order to monitor flow. Style 3 is provided with a Touch Screen, PLC and Internet capabilities.

## Mounting Instructions: Flush Wall Mount

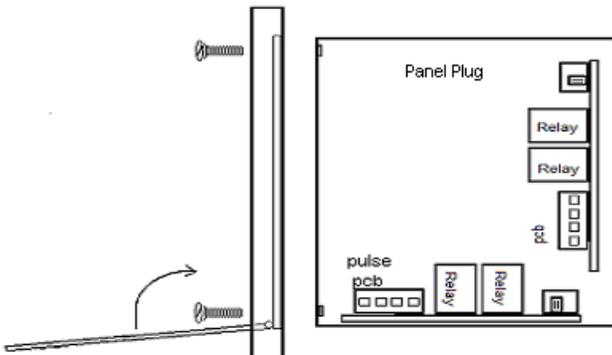
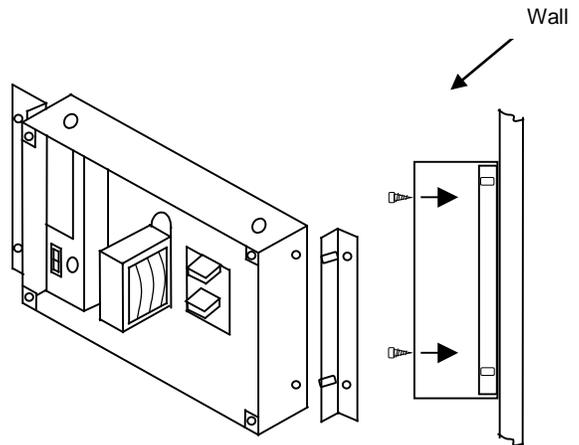
Two mounting flanges with screws are provided with the unit. Attach flanges as shown. Flanges can be affixed to any two corners of the unit. Then, fasten unit between two (2) wall studs. The face of the box should be even with the face of finished wall surface. After mounting unit, protect interior of box from construction debris.



## Mounting Instructions: Surface Mount

In order to surface mount the unit, it is necessary to attach the provided brackets to the rear of the housing. Care should be taken to verify that the mounting means securely fastens the unit to the wall surface. A stainless skirt is provided in order to conceal the wall box from view.

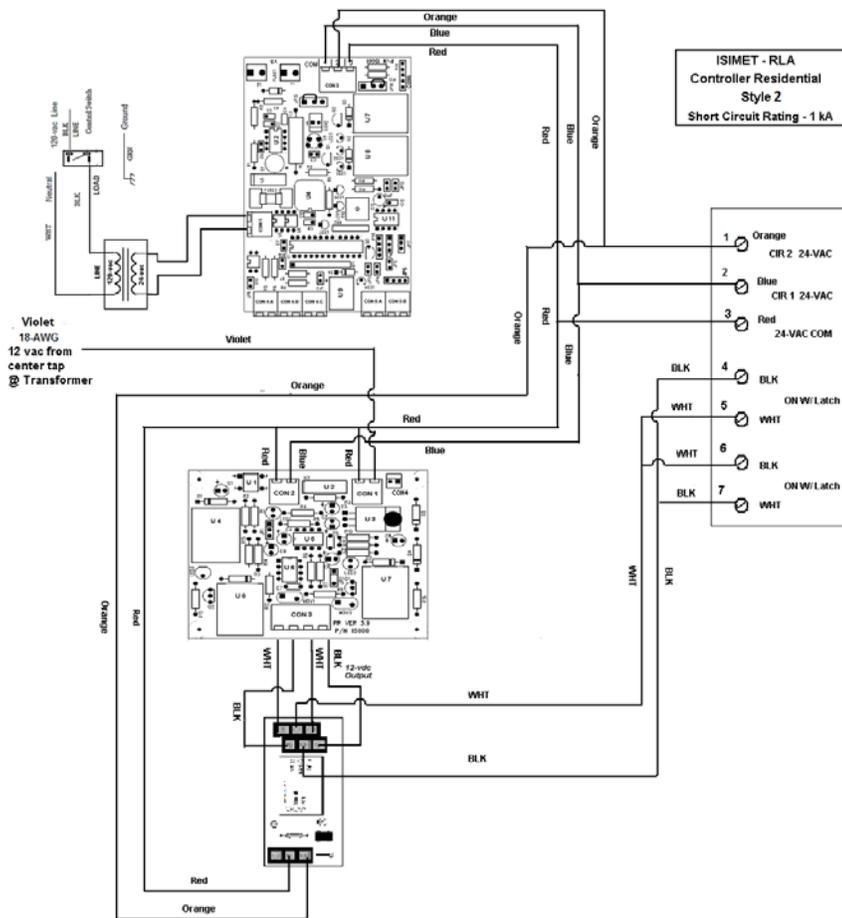
**CAUTION:** Provided mounting hardware must be used



## Mounting the Wall Panel:

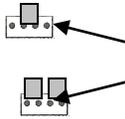
- Verify that Unit is wired with junction box cover in place.
- With the Door open, position the Wall Panel over the Wall Box as shown.
- Holding panel in front of box, affix panel to box using four (4) 8-32 stainless screws
- Close the panel and lock.

**CAUTION!** Do not install the panel until all wall finishes are complete.



Connect supply valve to pins 4 & 5.  
 Connect drain valve to pins 6 & 7.  
 Reset SERVICE Switch opens Supply Valve for normal usage.  
 RESET Operation Switch opens valve for monitoring and will close valve upon any type of Panic or Input Signal.

**Monitoring Circuit- JP6**  
 Output Configuration Jumpers @ Panic Output  
 1 jumper across center two posts = dry-contact.  
 2 jumpers across each pair of posts = 24-vac output



**Inputs:**

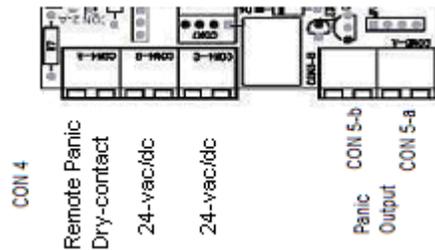
(CON4-A) Remote Panic / Dry-contact will accept a series of dry-contact output type monitoring devices to turn OFF the water supply.

(CON 4-B & C) The 24-vac/dc Inputs will accept a single signal from a sole monitoring or control device to turn OFF the water supply.

**Notification Output Terminals:**

CON 5-B provides a dry-contact output.

CON 5-A provides either a dry-contact or 24-vac output per selection at JP3. 2 jumpers provides 24-vac. A single center jumper provides dry-contact output.



**WARNING!! Other pcb Jumper placements**

Jumpers at JP 3, 7, 8, 10, 11, 12, 13, 14 are factory placed in order to configure the circuit board to specific functions for the Controller. Removal and/or re-placement may cause the unit to malfunction. A jumper sets the code to accept an Alarm System Input. No jumper will set the code to accept a monitoring input to turn the water OFF. JP 4 and JP 5 are utilized to accept dry-contact inputs to the PCB.

**Output Circuit Terminal:**

The solenoids provided are ISIMET S-220 Series General Service Brass Valves with 12 vdc coils. These coils are polarized and must be connected correctly to the Output Terminal in order to function as intended. Connect Supply Solenoid to the 'ON w/Latch Terminals. If provided, connect Drain Solenoid to the 'ON w/ Un-Latch Terminals. Make connections to 'BLK' and 'WHT' pins to match instructions provided with the solenoids that are similarly color coded. Piping and wiring for solenoids should follow details provided with the solenoids.

Knockout holes for connecting the electrical conduits are located at the top left and right of the Wall Box.

- Connect rigid conduit for the required 120-vac electrical service.
- Connect conduit for the operating power to the upper left top of the enclosure at the junction box.
- Connect conduit for the operating power for the output to the upper right top of the enclosure.

### **Wiring the Unit:**

#### **Important!**

**Verify that the electrical supply is disconnected prior to connecting wiring to the DLA Controller.**

To wire the Controller:

1. Remove the junction box cover.
2. Make final connections to the 120-vac electrical service to wiring within the junction box. Verify that line wiring (Black), neutral (White), and ground wire (Green) are correctly connected. Minimum recommended wire size is 14 AWG.
3. Replace the junction box cover before activating or testing the unit.

#### **Optional Input Control circuit:**

24-vac/vdc active OFF inputs can be connected at CON 4-B and 4-C (JP 11 determines 4-C usage). Refer to jumper configuration chart. Make connection from only one source at each connector terminal.

#### **Remote Panic Input Connection:**

Flow Sensors and/or moisture sensors providing dry-contact outputs are connected to the PCB at CON 4-a. Flow Sensors should have the time delay function set to the approximate time needed by ice maker machines to cycle so that this process will not inadvertently trip the Unit to OFF. An optional Remote Panic Button can also be connected at the CON 4-A

#### **Optional Panic Output Terminal:**

A configurable Panic output is activated at CON 5. See configuration chart and location of this connector on page 5.

#### **Connection of the Wall Panel Plug:**

The Unit is equipped with a 9 pin d-sub connector

- Turn counter-clockwise the two retaining clips at the top of the Panel, and open.
- Insert plug onto circuit header on PCB.
- Turn Power ON.
- Close the panel and lock.

**CAUTION!** Do not install the panel until all wall finishes are complete. Verify that the plug is configured correctly. Incorrect insertion will prevent operation of unit.

#### **Important!**

**All local codes must be followed when installing this unit and when connecting the conduit to the service panel and making wiring connections. Do not install wiring or cable for integrated systems, remote panic assemblies or other interface wiring within conduit for either 24-vac control or 120-vac line voltage. Each wiring system including outputs should be housed in independent conduit and not bundled with wiring for other systems. Failure to comply with these wiring specifics may create transient voltage at the pc board and cause system malfunction and/or failure.**

#### **Operation of the Unit:**

Engage the OPERATE Switch. The circuit will activate and the panel Green LED above that switch will illuminate to indicate that the Unit is actively monitoring the water flow within the residence. To turn OFF the Monitoring function of the unit, engage or the OPERATE Switch to the OFF position. Once the Unit is in the OFF mode, it will be necessary to re-engage the SERVICE ON switch in order to reactivate the service.

The Green LED above the SERVICE ON Switch will illuminate if the water service solenoid is open.

Once in the Panic Mode the SERVICE Switch must be engaged in order to reactivate service. All Input Signals must be withdrawn prior to reactivation. If it is desired to have the water service valve ON without re-activating the monitoring function of the unit, then engage only the SERVICE Switch.

## Principle of Operation:

A dry-contact Input from a Building Alarm Signal connected to JP 5 on the PCB will turn ON the Unit, placing it in the OPERATE Mode. Removal of this signal will turn OFF the OPERATE Mode and turn ON the SERVICE ON Mode.

The Unit may also incorporate freeze protection devices. A device similar to a thermometer with dry-contact outputs that close upon a set low temperature will turn the Unit OFF. Contact is made at CON 4-A on the PCB. Additional latching solenoid(s) could be incorporated into the system that opens upon the un-latch sequence, thus partially draining the piping system.

## Equipment Maintenance:

- ❑ The RLA Series Controller should have annual inspections.
- ❑ **ISIMET** recommends that you periodically conduct a brief test of the system to verify that the output circuit performs as intended.
- ❑ If examination of the unit indicates tampering, **ISIMET** recommends that you first review the installation and wiring portions of this manual prior to placing the unit in service.
- ❑ **ISIMET** recommends that piping systems be thoroughly flushed and cleaned and tested for leaks prior to placing the system into use. Periodic testing of these solenoids will assure that the piping system continues to function properly.

**NOTICE:** If the unit requires service and it is necessary to disconnect the power supply, then prior to turning power supply OFF, you should engage the SERVICE ON switch in order to insure that the water supply solenoid is open. To close the water supply solenoid for maintenance purposes of the water service, engage the OPERATE ON switch twice leaving a brief moment between each engagement.

If you have any questions regarding the operation and maintenance of the RLA Controller, please contact an **ISIMET** Service Representative.

The enclosure has a NEMA 1 rating. It is not intended for use in wet areas. Exercise caution to prevent exposure of the interior compartment of the enclosure to moisture. If moisture is present within the enclosure, **ISIMET** recommends that the control switch be turned OFF, power be disconnected from the unit until the source of the moisture is determined, and all moisture is removed from the compartment.

The electronic controller (PCB) is sensitive to dust and other air-borne particles. Do not expose the interior compartment of the enclosure to dust. During the semi-annual inspection, if dust or other material is present, **ISIMET** recommends that you remove all foreign matter before operating the unit.

If the Unit fails to operate, **ISIMET** recommends that you check the power supply to the unit. With the control switch in the ON position, LED Fuse 1 should illuminate. If not, check the service breaker and PCB fuses. If the fuse is not damaged and the unit still does not function, contact **ISIMET** or your local Service Representative.



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