

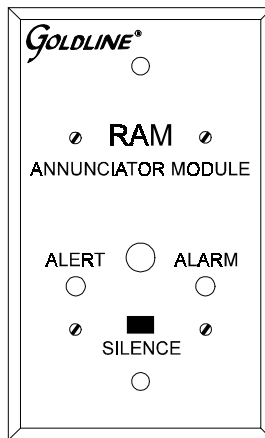
### Description

The RAM is a 24V Annunciator Module containing an internal time delay of 0 to 60 minutes. The RAM features a piezoelectric horn and LED indicator lights all contained on a standard size wallplate for mounting to an electrical handibox. It also features an internal relay which can be used for additional RAMs, telephone auto-dialers or additional alarm devices. When 24VAC is applied to the RAM (via some sensing device), the "Alert" LED is illuminated and the internal time delay begins to count. When the time delay is satisfied the "Alarm" LED illuminates, the horn sounds and the SPDT (single pole double throw) relay is energized. The RAM also features a "Silence" push-button for the horn as well as selectable horn repeat function. In addition, a selectable "latch" feature gives you the option of slaving the relay

to the horn or allowing it to operate independently.

The RAM can be used as a temperature alarm with Goldline controls, or as a general purpose alarm for pressure, flow, motion, humidity or any other sensing device which provides a contact closure.

The RAM can also be used with the Goldline RIM-5 indicator module. This combination will allow the RAM to be used with multiple sensing devices. The RIM-5 can give a visual alarm indication on up to 5 alarm sensing devices. When an alarm is initiated by any of the sensing devices (contact closure feeding 24V to the RIM-5), one of 5 LEDs will illuminate, indicating which device is in alarm. The signal is then passed to the RAM for an audible indication.



### Specifications

**Input:** 24V AC/DC +/- 10%;  
1.5VA

**Output:** SPDT dry contact, Class  
2, 60VA max

**Time Delay:** adjustable 0 to 60 minutes

**Horn:** 85-90 dB

**Operating Temperature:** -30° to 130°F

**Operating Humidity:** 0-95%, non-  
condensing

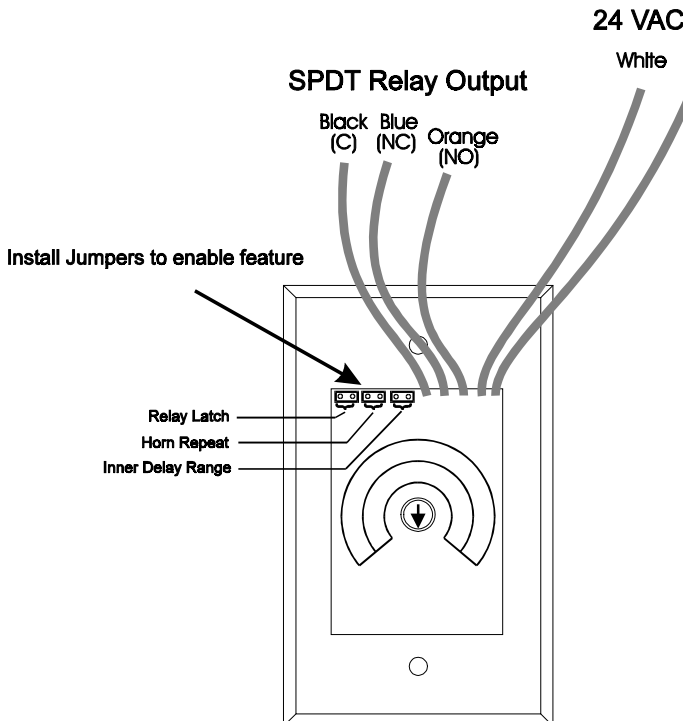
# Installation

The RAM may be mounted in any location, at any distance from the controls providing a contact closure of 24V. The modules are designed to be mounted to standard single gang electrical boxes. Follow the wiring diagram below when wiring the RAM. Red (R) and white (C) leads are for 24V input. Typically the device which controls the RAM will make and break the red (R) lead. The blue, orange and black leads are the relay output. Black is common (C), blue is normally closed (NC) and orange is normally open (NO).

A jumper is provided to enable and disable the horn repeat function (comes enabled from factory). When the RAM is alarming, the "Alarm" LED illuminates, the relay contacts energize and the horn sounds. If the "Silence" button is pressed, the horn will silence and the internal time delay will start to count again. The "Alarm" LED will remain lit, and if the "latch" feature is enabled, the relay will de-energize when the horn silences. If the "latch" feature is disabled, the horn will silence but the relay will

remain energized. See diagram for location of "latch" jumper. After silencing, if the alarm condition persists through another time delay, the horn will sound again. This cycle will keep repeating as long as the alarm condition continues. This repeat feature can be disabled by removing the "horn repeat" jumper (see diagram). When removed, the horn will turn off when the "Silence" button is pressed and remain off even if the alarm condition continues. The relay will either work independently and stay energized, or "latch" to the horn and stay de-energized (depending on the jumper position). Set these jumpers in the desired mode before installing.

A jumper is also provided for selecting the time delay range. Two calibrated time delay ranges appear on the back of the RAM. To enable the inner time delay range, the range jumper (see diagram) must be installed. To enable the outer time delay range, the range jumper must be removed. Select the desired jumper position before installing RAM.



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# Operation

The RAM may be used as an annunciator module for an Independent Energy SP control, TDA-6, TDA-SP or any other device capable of making a contact closure of 24VAC. When an off temperature condition exists, the alarm device will make a contact closure which supplies the RAM with 24VAC. The yellow "Alert" LED will illuminate and the internal time delay will start to count. If this condition returns to normal (alarm device opens contacts) before the time delay expires, the "Alert" LED will go off and there will be no alarm. If the off temperature condition continues beyond the time delay (contacts remain closed), the "Alarm" LED will illuminate, the horn will sound, and the internal relay will energize.

Pressing the "Silence" button will silence the horn. When silenced, both LEDs will remain on and the relay will stay energized. The horn will not sound again unless the horn repeat feature is enabled and the alarm condition persists.

A quick check can be performed on the RAM to verify that it is functioning properly. Apply 24V to the RAM. The "Alert" LED will be on and the time delay will start to count. Now press the "Silence" push-button. The "Alarm" LED, horn, and relay should activate. If not, see troubleshooting below.

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# Troubleshooting

The RAM is straightforward to troubleshoot. If you cannot determine the problem, refer to the "Technical Assistance" section below.

## 1. "Alert" LED does not illuminate.

The "Alert" LED should go on as soon as 24V is applied to the RAM. Verify that there is input voltage with a voltmeter. If not, check the input wiring to the RAM as well as the 24V source. If there is input voltage, there is an internal problem with the RAM and it should be returned for repair.

## 2. RAM does not alarm.

The "Alarm" LED, horn and relay should activate as soon as 24V is applied and the time delay is satisfied. If not, verify that there is input

voltage with a voltmeter. Verify (with some timepiece) that enough time has passed to satisfy the time delay. Allow more than enough time to pass due to the possibility of error in the calibration. If the RAM still does not alarm there is an internal problem with the unit and it should be returned for repair.

## 3. Relay does not energize

An ohmmeter will be needed to verify that the internal relay is functioning properly. When the RAM is in "Alarm" mode, there should be continuity (short) across the black and orange wires, and no continuity (open) across the black and blue wires. If this is not the case, the RAM should be returned for repair. Note that when the "latch" feature is enabled, the relay will do exactly what the horn does. If the horn is on, the relay is energized, if the horn is off, the relay is de-energized.

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# Technical Assistance

For help in installing, operating, or troubleshooting this control you may call for technical assistance at **800-343-0826**. Independent Energy's technicians are available from 8:00AM

— 5:00PM Eastern Time, Monday through Friday. You may call at other times and leave a message, and a technician will call you back as soon as possible.