

Remote Annunciator Module

RAM™

FEATURES

- Yellow alert LED
- Red alarm LED
- Alarm horn, continuous or pulsed tone
- Alarm horn silence switch
- Adjustable initial alarm delay time
- Adjustable repeat alarm delay time
- Alarm status 2PDT relay
- Relay-follows-horn mode
- Delayed relay mode
- TDR/horn disable mode
- RoHS Compliant
- Test Mode

SPECIFICATIONS

| | |
|---------------------|--|
| Power | 24VAC @ 100ma or 24VDC @ 35ma |
| Operating Temp. | 0-120 deg. F |
| Operating Humid. | 0-95%, non-condensing |
| Alarm status relay | 2PDT gold-clad silver alloy contacts 1A @24VAC, 2A@24VDC |
| Alarm horn | continuous or pulsed, 85 db at 10 cm. |
| Timing accuracy | +/- 2% |
| Initial delay time | none or 1-31 seconds in one-second increments 10-310 seconds in ten-second increments 100-3100 seconds in hundred-second increments 1000-31000 seconds in thousand-second increments |
| Repeat delay time | no repeat or 1-7 minutes in one-minute increments 10-70 minutes in ten-minute increments 100-700 minutes in hundred-minute increments 1000-7000 minutes in thousand-minute increments |
| TDR mode delay time | Max of 7516 hours (313 days) in mixed minute-hour increments |
| Connections | Screw terminals 22-14 AWG wire |
| Mounting | White plate w/black lettering mounts to standard single junction box |
| Dimensions | 4.5"H x 2.75"W x 1.25"D (11.4 x 7.0 x 3.2cm) |
| Weight | 2.1 oz, (60 g) |

NORMAL ALARM MODE

When 24VAC or 24VDC from an alarm initiating device(fig.1), or a signal from the RIM-5 indicating module(fig.2), is applied to the 'SIGNAL IN' and (-) terminals on the RAM, the yellow alert LED will light and begin the initial delay timing as set on the dip switches(fig.2). After the selected initial delay time has expired, the yellow alert LED will go off, the red alarm LED will light, the horn will sound continuously and the 2PDT relay will energize. When the silence button is pressed, the horn will be silenced, the red LED will remain on, the relay will remain energized and the alarm repeat timing as set on the dip switches will begin. After the selected alarm repeat time has expired, the horn will again sound continuously until it is silenced at which time the repeat timing will begin again. Once the alarm condition is removed (the 24vac/vdc is removed from the signal terminal on the RAM), the alarm, lights, horn and relay will de-energize and the unit will reset (fig.6).

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If no initial delay dip switches on S2 are put in the on position, the red alarm LED, relay and horn will energize immediately when a 24v signal is applied to the RAM.

If no repeat delay dip switches on S2 are put in the on position, the horn will not re energize after the silence button is pressed. (this is the default factory setting).

If a pulsed instead of continuous horn is desired, the dip switch (#3 on S1) may be switched on and the horn will sound in 1/2 sec. pulses. In this mode, the red LED will pulse when the horn is silenced (fig.7).

If the relay-follows-horn dip switch (#4 on S1) is put in the on position, the relay will energize any and every time the horn is on. This means that the relay will be de-energized when the horn is silenced and during the alarm repeat delay time. It will re-energize when the horn re-energizes (fig.8). Turning on the pulsed horn dip switch (#3 on S1) in this mode will pulse the horn and red LED as above (fig.15).

If the delayed relay dip switch (#2 on S1) is put in the on position, the 2PDT relay will not energize immediately when the horn does, until the expiration of the time selected as a repeat time delay. It will then energize and remain energized until the RAM is reset. This feature gives operators a chance to correct an alarm condition before any relay controlled automatic procedures are begun (fig.9).

If the delayed relay and relay-follows-horn dip switches (#2 & 4 on S1) are on, the 2PDT relay will remain de-energized until the expiration of the time selected as a repeat time delay. It will then energize and remain energized until the horn is silenced. The relay will continue to match horn operation (fig.10).

SETTING THE DIP SWITCHES

Setting the dip switches is easier before wiring. In the standard alarm mode, the initial delay time is measured in seconds and the repeat delay time is measured in minutes. The dip switches are binary in nature and time values are additive. For example with dip switch 2 (2 seconds) and dip switch 5(16 seconds) on S2 both on, and switches 1, 3 & 4 off, the initial time delay would be 2+16=18 seconds. If only dip switch 1 on S3 is on, this delay would be multiplied by 10 = 180 seconds. If only dip switch 2 on S3 is on, the delay would be multiplied by 100 = 1800 seconds. If both dip switches 1 and 2 on S3 are on, the delay would be multiplied by 1000 = 18000 seconds. In this way many different timing combinations can be had. Initial time delays can be from 0 (sw-1 thru 5 (on S2) off, sw-1&2 (on S3) off) to 31,000 seconds (8.6 hrs.) (sw-1 thru 5 (on S2) on (1+2+4+8+16=31 seconds), sw-1&2 (on S3) on (31x1000=31,000 seconds). In the same manner, repeat delay times can be from 1 min. (sw-6 (on S2) on ,sw-7&8 (on S2) off , sw-3&4(on S3) off) to 7,000 minutes (116.6 hrs.) (sw-6 ,7,8 (on S2) on, sw-3&4 (on S3) on). No repeat is the default setting (sw-6 ,7,8 (on S2) off, sw-3&4(on S3) off). See (fig.4) for common time conversions.

TEST MODE

If an optional **constant** source of 24v from the same transformer that is being used for the signal input is connected to the RAM on the 24v(+) terminal, the RAM now has a testing function. Depressing the silence switch on the front of the RAM for a minimum of 3 seconds will energize both LED's, the horn and the relay. This will be useful during initial testing of the alarm circuit or as a means of verifying that the RAM is operating properly. Keep in mind however that the relay is also energized as part of the test so any operations that the relay was initiating will also be affected. If this testing feature is not desired, do not hook up the constant source of 24v power. If replacing an older style RAM, the white (com) input is the same as the 24v(-) terminal and the red (+) wire input is the same as the signal input.

TIME DELAY RELAY (TDR) MODES

When the horn disable/TDR mode dip switch (#1 on S1) is put in the on position, The RAM can be used as a multi-mode time delay relay. In addition to the horn being disabled for all of the functions of this mode, the units of timing are also changed. The repeat delay time units are changed from minutes to hours. The initial time delay time units are changed from seconds to minutes only if there is a setting for the repeat delay time. If the repeat delay time is set to 0, (dip switches 6, 7 or 8 on S2 are not on) the units for the initial delay time remain in seconds. In this mode the initial and repeat delay times are also both added together, this gives delay times from as little as 1 second to approximately 313 days. (fig.11) is an on delay, (fig.12) is an off delay, (fig.13) is an over-ride timer and (fig.8) is a cycle timer.

If only one SPDT contact is needed and a higher contact rating is desired, connecting each of the NO, NC and COM from each relay output together will in effect double the contact ratings of the relay (fig.5).

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FIG.1 - WIRING 24V TO THE RAM FROM AN ALARM CONTACT CLOSURE

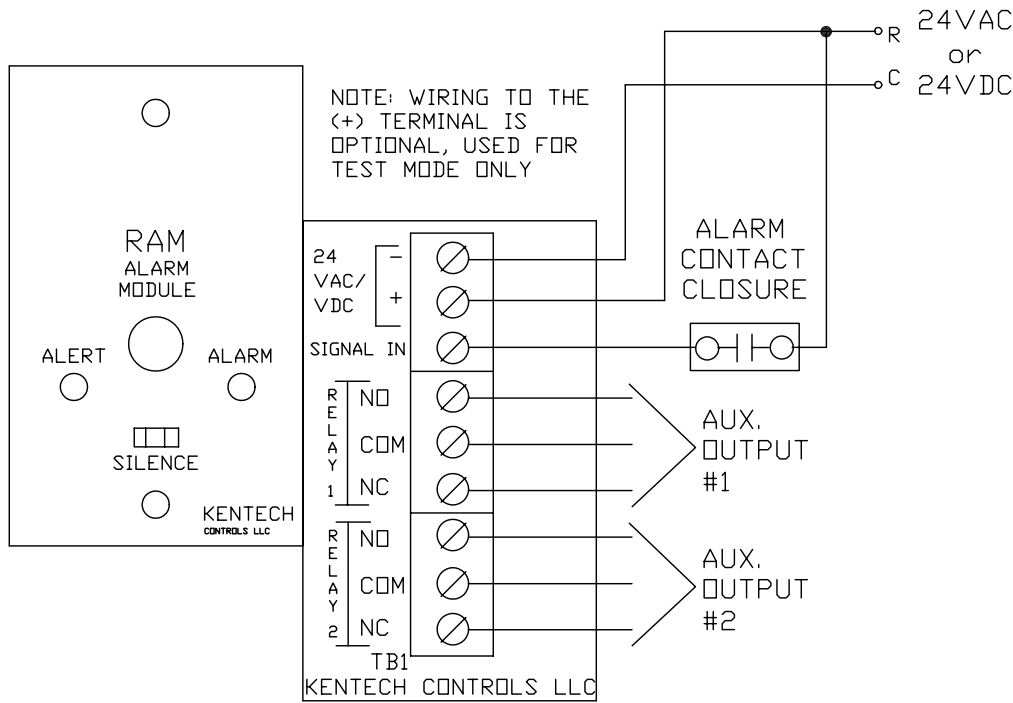


FIG.2 - TERMINAL AND DIP SWITCH LOCATIONS

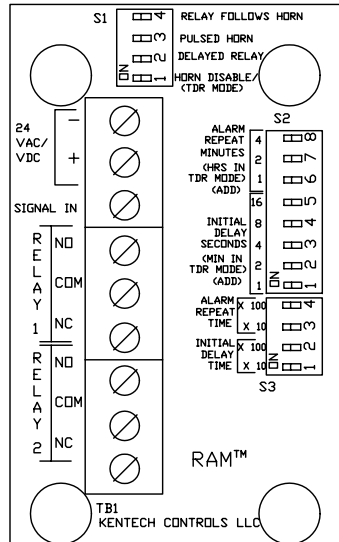


FIG.3 - WIRING THE RAM TO THE RIM-5

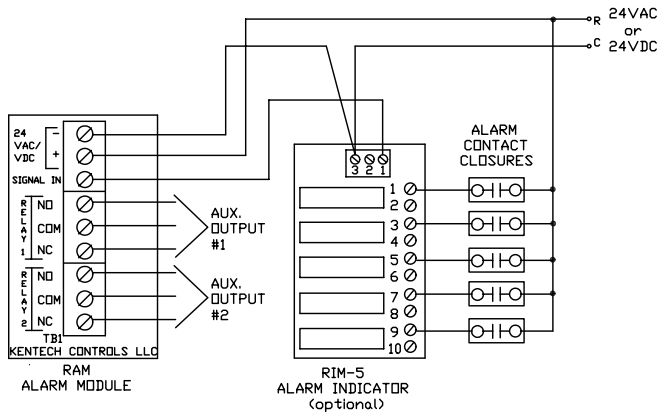


FIG.4

1 HOUR=3600 SECONDS
 1 DAY=1440 MINUTES
 1 WEEK=168 HOURS
 1 MONTH=720 HOURS (30 DAY)

FIG.5

USING BOTH SETS OF RELAY CONTACTS TO DOUBLE THE EFFECTIVE CONTACT RATING OF THE RELAY

