

Features

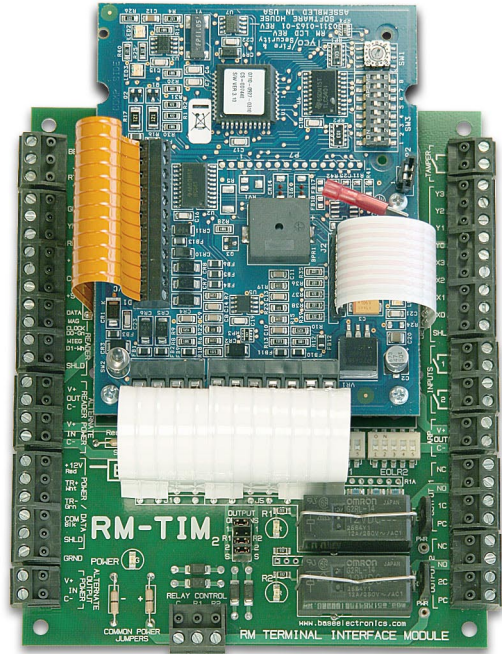
- **Mount and Wire the RM4 in Seconds !**
- **Depluggable Terminals - same style as RM4**
- **2 supervised inputs with switch selectable on-board 1K EOLRs**
- **2 selectable powered or dry contact outputs**
- **power readers with 5V, 12V, or Alternate Reader Power source**
- **power outputs with 12vdc or Alternate Output Power source**
- **selectable cable shield continuity**
- **Status LEDs for 12vdc Power and Output Relays**
- **New! Depluggable/Replaceable 10A Output Relays**
- **New! External Relay Control Terminals & Output Option Jumpers**
- **New! Wire an external Tamper Switch to the RM4 tamper circuit**
- **New! Lower profile and smaller footprint pcb - 5" w x 6" h**
- **Includes all mounting hardware**

Description

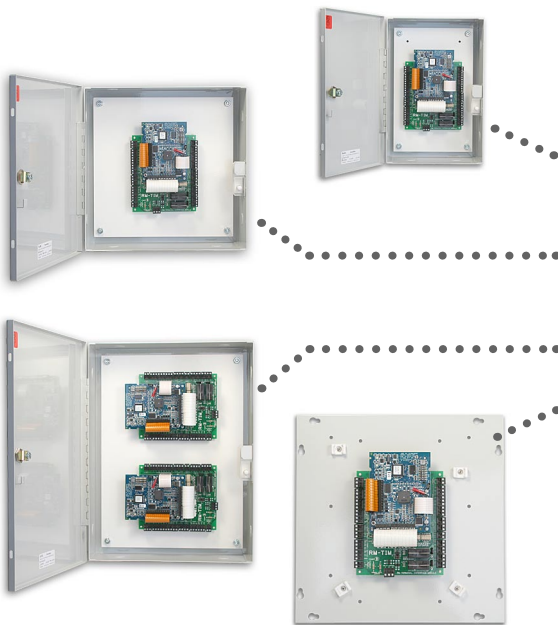
The RM-TIM2 highly simplifies and minimizes the field installation, wiring, and setup of the C-Cure RM4 Personality Module. Includes all mounting hardware to 'piggyback' your RM4, prewired flex jumpers and connectors, depluggable/replaceable output relays, dip-selectable single or dual 1K input end-of-line resistors, and LED status indicators. All field wiring terminals are depluggable for easy field terminations.

New features for the RM-TIM2 include a smaller footprint pcb, external Output Relay Control Terminals, Output Option Jumpers, and the ability to wire an external Tamper Switch into the RM4 on-board tamper circuit.

The RM-TIM2 supercedes the older BASE RM-TIM unit and is factory-configured to work with the newer RM4 (revised 2006). The RM-TIM2 can also be configured to handle the older version of the RM4 - notify BASE when ordering.



Nylon Standoff
(6 supplied with RM-TIM2)



RM-TIM2	Includes (1) RM-TIM2 Module, (4) 4-40 x 1/4" mounting screws for the RM4 and (6) nylon snap-in standoffs for installation into a user-supplied enclosure.
RM-TIM2-B	This model adds our UL Listed EB-12x08x04 Econo•Box. The RM-TIM2 Module is pre-mounted on the removable inner panel assembly. The box includes knockouts, hinged cover with keylock and heavy duty tamper switch.
RM-TIM2-BXL	Includes all the features of the RM-TIM2-B above but uses our larger UL Listed EB-12x12x04 Econo•Box.
RM-TIM2-2B	For double reader doors or 2 adjacent doors, this model includes (2) RM-TIM2 Modules mounted on one panel assembly inside our UL Listed EB-16x12x04 Econo•Box.
RM-TIM2-PBC	(1) RM-TIM2 Module mounted to a 12x12 pullbox cover plate. The light grey painted steel cover plate fits Hoffman and other 12x12 pullboxes and includes (4) heavy duty cable tie clips.

Install in accordance with all applicable sections of the National Electrical Code and other State or Local Regulations.

! WARNING Turn off all power feeding the module terminals before installing, servicing or changing any switch settings or wiring. Failure to observe this warning may cause electrical shock hazard or may damage internal or external circuit components.

! CAUTION The RM-TIM2 has no static sensitive parts. However, the C-Cure RM4 does contain static sensitive electronic components. Use proper ESD precautions when handling, wiring, or servicing the RM4 to avoid damaging internal circuitry.

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Installation Instructions

1. Models with Enclosures Remove the panel assembly from the enclosure. Hold the enclosure in the desired area and mark the rear hole locations on the wall or mounting channel surface. Using the appropriate hardware, mount the enclosure to the desired area. Complete all conduit and cable installations into the enclosure, then install the panel assembly and secure it to the enclosure studs with the hardware provided. (See separate Econo•Box instruction page)

2. Model RM-TIM2-PBC The RM-TIM2 module is pre-assembled on the included 12x12 cover plate. Remove the blank cover from your 12x12 pullbox and complete conduit and cable installation. Replace the blank cover with the RM-TIM2-PBC cover assembly with the RM-TIM2 facing the inside of the pullbox. When terminating cabling to the RM-TIM2, leave extra cable in the pullbox to enable the entire cover assembly to be lowered below the ceiling for easier wiring, testing and service.

3. Mounting the RM-TIM2 (Skip this step if board is pre-assembled on panel or cover plate) Locate the unit inside a UL Listed NEMA 1 enclosure (such as BASE LVPC or Econo•Box enclosure). Drill six 0.187" diameter holes (3/16") to match the six holes in the printed circuit board. Push the nylon standoffs supplied into each hole and snap the module into place. Mounting with double-sided tape is not recommended.

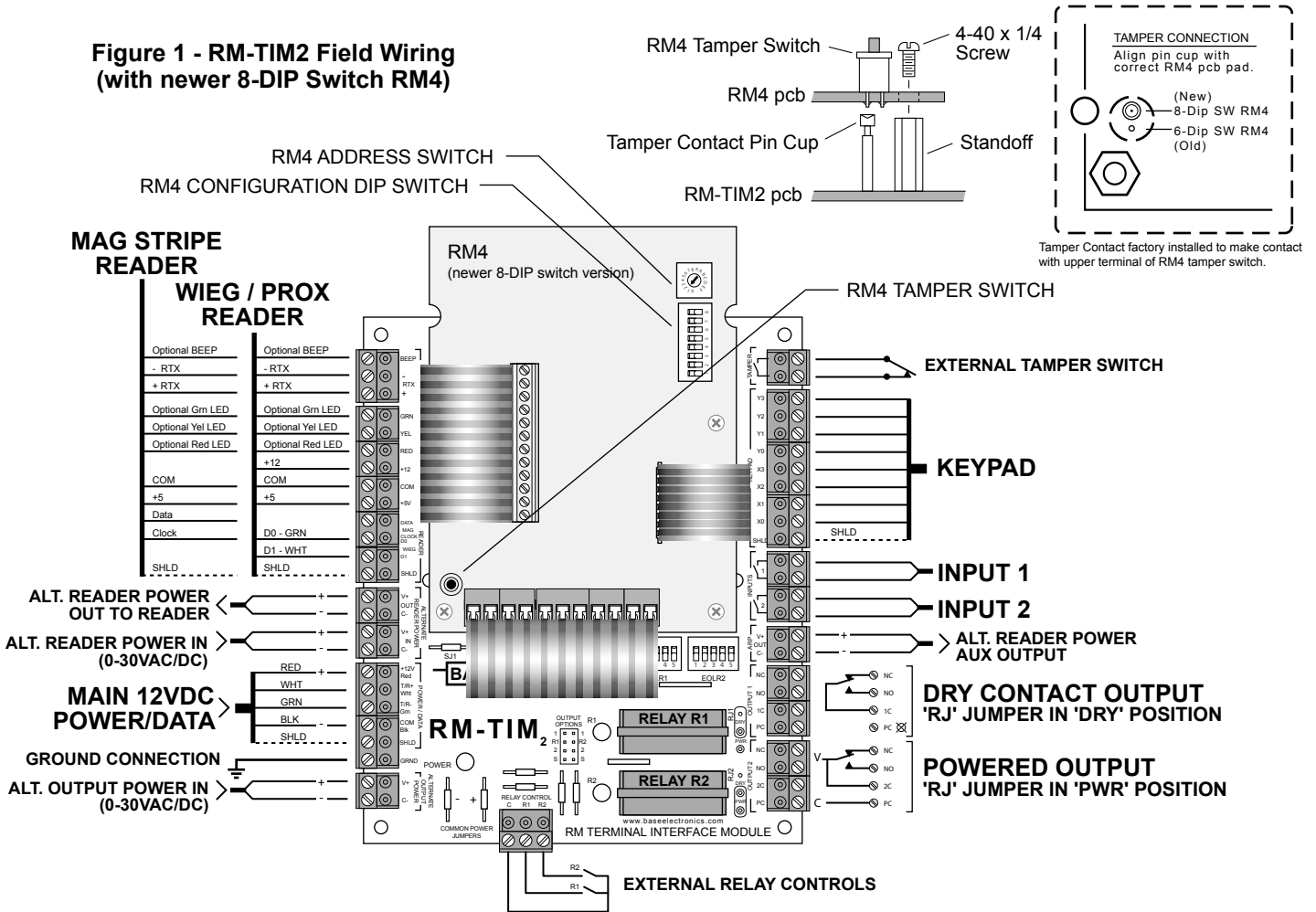
4. RM4 Version Differences

The RM-TIM2 is normally factory-configured for use with the newer 8-DIP Switch version of the RM4. BASE can also factory-configure the RM-TIM2 for use with the older 6-DIP Switch version of the RM4 - notify BASE when ordering. The RM-TIM2 is not field-reconfigurable for the other version. Details of configuration differences are shown at right.

RM-TIM2 Differences for Mounting the New RM4 or Old RM4

	RM-TIM2 for new RM4	RM-TIM2 for old RM4
Flex jumper arrangement for reader connections	12 cond Flex Jumper to RM4 terminal strip	4 and 6 cond Flex Jumpers to RM4 J3 and J4 headers
Tamper Contact pin location under RM4 tamper switch	Tamper Contact must connect to upper tamper switch pin	Tamper Contact must connect to lower tamper switch pin
Conductors to RM4 for RTX +, -, beep	provided	not provided

Figure 1 - RM-TIM2 Field Wiring (with newer 8-DIP Switch RM4)



5. Mounting the RM4 Board Refer to Figure 1 (page 2) for mounting the newer 8-DIP switch version of the RM4. Refer to Figure 2 below for mounting the older 6-DIP switch version of the RM4.

Locate and align the RM4 mounting holes over the 4 standoffs provided on the RM-TIM2 board. Install the 4 small 4-40 screws provided. While these screws are still loose, align the Tamper Contact Pin Cup with the proper RM4 pcb pad under the RM4 tamper pushbutton. When the pin cup is aligned properly, push the RM4 against the Pin Cup depressing the contact plunger slightly and gently secure the 4-40 screws.

Without twisting or stretching the jumpers, locate the free ends of the flex jumpers and mate them to the RM4 board connectors. The depluggable terminals of J1 and J5 may be positioned horizontally or vertically (recommended) at RM4 P1 & P5. Complete the RM4 assembly by configuring the Address and DIP Switch settings for your installation.

Field Wiring

- 1. RM4 Main Power and Data** Connect the incoming 12VDC main power and data line to the lower left terminals marked **POWER/DATA**.
- 2. Reader Power** If the reader will be powered from 5VDC or 12VDC, the power will be obtained from the **READER** terminals. If an alternate reader power source is used (**ARP**), wire this power source to the lower left terminals marked **ALTERNATE READER POWER - IN**. Route this power to the reader from the terminals marked **ALTERNATE READER POWER - OUT** (at left) or **ARP OUT** (at right). **ARP** should be 0-30VAC/DC 2.5A Max.
- 3. Reader / Keypad Wiring** Connect reader or keypad wiring to the appropriate terminals as shown in Figure 1 or 2.
- 4. Cable Shield Continuity** Depending on the noise conditions of the cable environment, it may be desirable to either maintain or break continuity of the cable shields between the data, reader, and/or keypad cables. Maintaining or cutting jumpers SJ1 or SJ2 allows quick changes of the shield continuity with no cable rewiring.

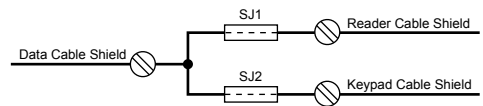
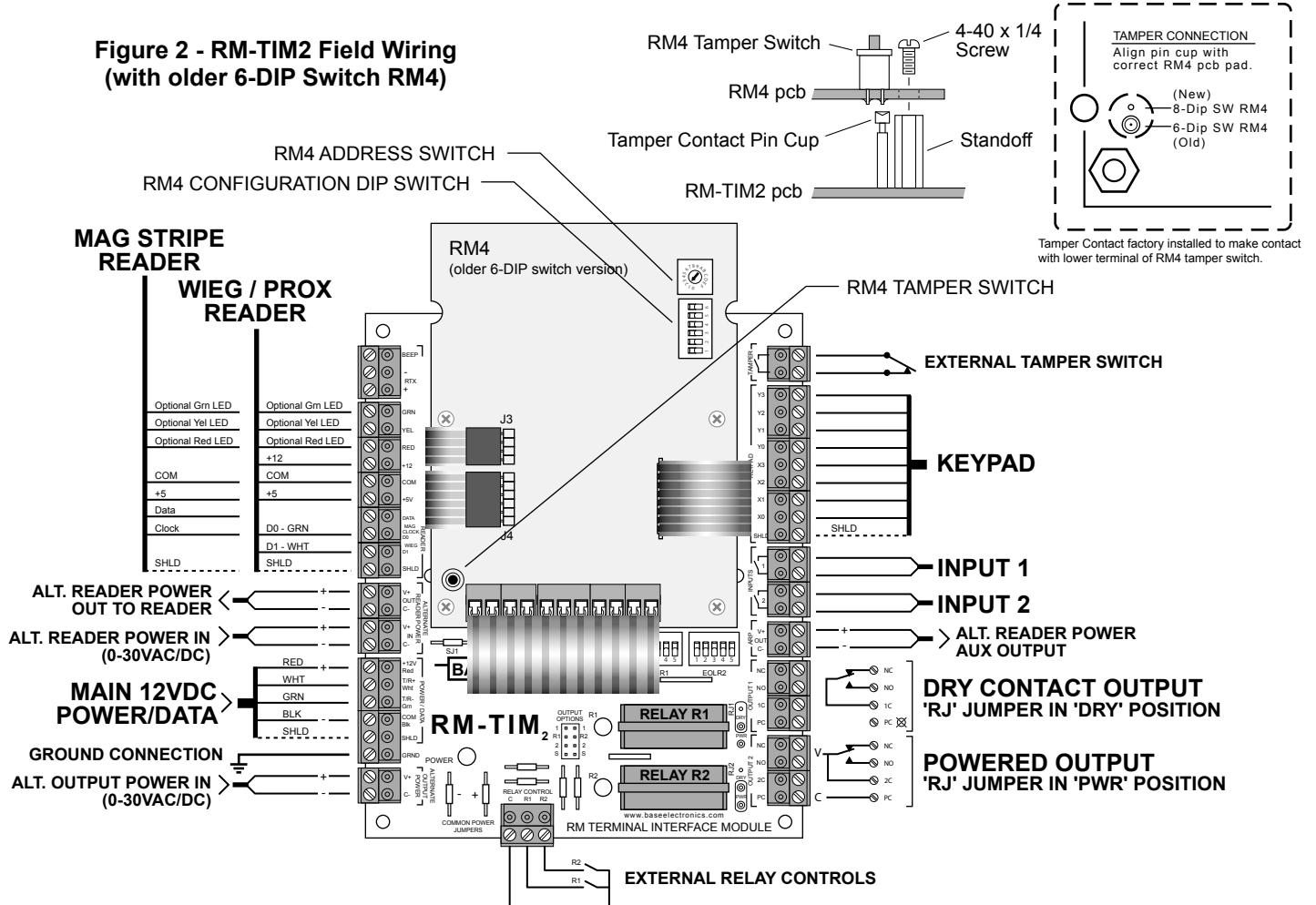


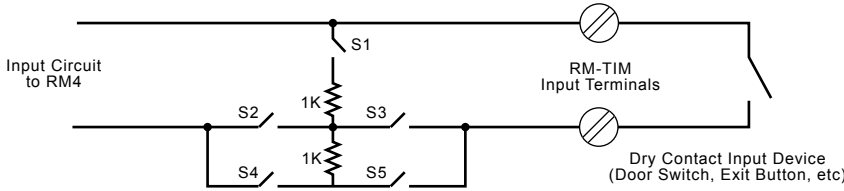
Figure 2 - RM-TIM2 Field Wiring (with older 6-DIP Switch RM4)



Field Wiring (continued from page 3)

5. Ground Connection The connection from the **GRND** terminal to the RM4 is already made through the RM-TIM2 metallic standoff hardware eliminating the need for a wire jumper. Connect an external ground wire to the **GRND** terminal on the RM-TIM2.

6. Input Wiring and Supervision Resistance Connect the input device cabling to the right side terminals marked **INPUTS**. On-board end-of-line resistance is selected at the input DIP Switches, **EOLR1** and **EOLR2** as shown below.



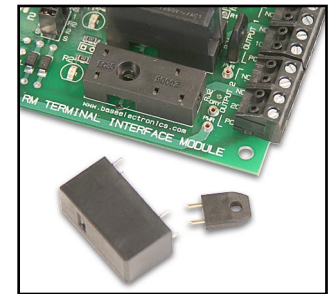
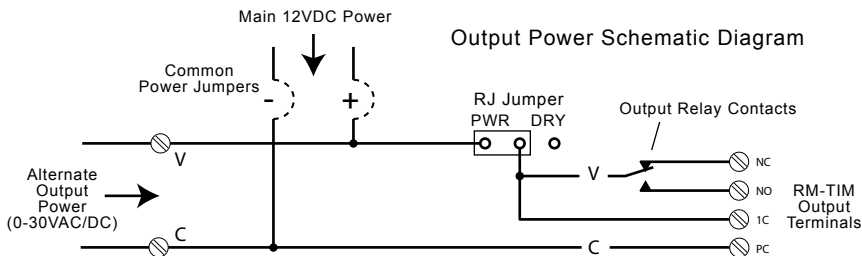
Desired EOLR Configuration	Switch				
	ON ↓	1	2	3	4 5
Dual 1K with NO Device	↑	↑	↓	↓	↑
Dual 1K with NC Device	↑	↓	↑	↑	↓
Terminated Input (No Device)	↑	↑	↓	↓	↓
None (or External Resistors)	↓	↓	↑	↑	↓
Single 1K in Series	↓	↑	↓	↓	↑
Single 1K in Parallel	↑	↑	↑	↑	↑
2K in Parallel	↑	↓	↓	↓	↑

7. Relay Outputs The RM-TIM2 has 2 on-board relay outputs that can be easily and independently configured for a variety of uses. The relays can be driven by the output control circuitry on the RM4 module as well as controlled externally at the **RELAY CONTROL** terminals. (See *Controlling the Output Relays* below). Relay contacts are rated at 10A. Each relay can be configured for Dry Contacts or Powered Output by the placement of a removable RJ jumper. When using powered outputs, you have a choice of what power source will be sent through the output relay contacts and on to the output terminals - either the main 12VDC power source feeding the RM-TIM2, or an Alternate Output Power source. Each relay is depluggable and replaceable. Each relay position includes a retaining clip to secure the relay in the socket.

Dry Contact Output Relays are configured for dry contact outputs by positioning the removable jumper **RJ1** or **RJ2** to the **DRY** position. See Figure 1 or 2 for wiring to the dry contacts at the lower right of the RM-TIM2.

Powered Output with Main 12VDC Power Relays are configured for powered outputs by positioning the removable jumper **RJ1** or **RJ2** to the **PWR** position. To power the output with the main 12VDC power feeding the RM-TIM2, the **COMMON POWER JUMPERS** must remain intact, and no Alternate Output Power source can be used.

Using an Alternate Output Power source Relays are configured for powered outputs by positioning the removable jumper **RJ1** or **RJ2** to the **PWR** position. To power the output with an Alternate Output Power source, first cut both **COMMON POWER JUMPERS**. Wire the Alternate Output Power source to the terminals at the lower left marked **ALTERNATE OUTPUT POWER - IN**. This power source can be 0-30VAC/DC 2.5A max. When an Alternate Output Power source is used, the outputs cannot be powered by the main 12VDC power feeding the RM-TIM2.

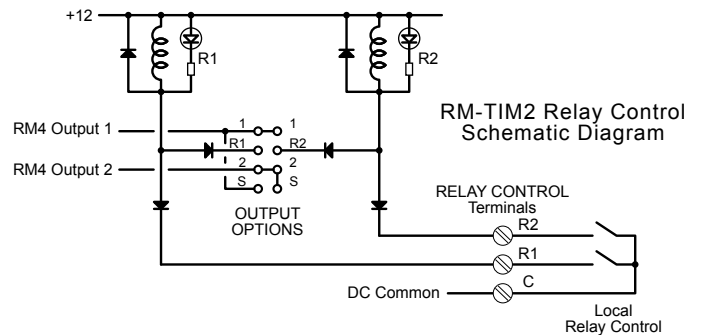


Depluggable Output Relay and RJ Jumper

Controlling the Output Relays Output Relays R1 and R2 can be controlled by the output circuitry of the RM4 (setup through access system software). Additional RM4 control options are available via the RM-TIM2's Output Option Jumpers. The relays can also be locally controlled by connecting to the Relay Control terminals. A schematic of the control circuitry is shown below.

Examples of Output Option jumper settings...

RM4 Output #	Controls RM-TIM2 Relay#	RM4 Output #	Controls RM-TIM2 Relay#	RM4 Output #	Controls RM-TIM2 Relay#
1	1 → R1	1	1 → R1 & R2	1	None
2	2 → R2	2	2 → None	2	R1 & R2
S	S	S	S	S	S
1	1 → R2	1	1 → R1	1	R2
2	2 → R1	2	2 → R1	2	R2
S	S	S	S	S	S
1	1 → None	1	1 → R1 & R2	1	R1 & R2
2	2 → None	2	2 → None	2	R1 & R2
S	S (Jumper Storage)	S	S	S	S



Field Wiring *(continued from page 4)*

8. RM4 Tamper Circuit and RM-TIM2 Tamper Switch terminals

A small Tamper Contact located under the RM4 tamper switch pcb pad allows this tamper circuit to be routed to the RM-TIM2's **TAMPER** terminals on the upper right. This permits the use of an external cabinet tamper switch to operate the internal tamper circuit of the RM4. Figures 1 and 2 show details of the proper location and alignment of the Tamper Contact when mounting the RM4 board to the RM-TIM2.

The external cabinet tamper switch should be a closed dry contact when the cabinet door is closed as shown in Figure 1 or 2. BASE LVPC and Econo•Box enclosures include this type of tamper switch. Models RM-TIM2-B, RM-TIM2-BXL, and RM-TIM2-2B include tampered Econo•Box enclosures. Limit the length of the external tamper switch wiring to 10 feet or less. Remember to configure the RM4 DIP switch for Normal tamper operation (SW3-4 off).

Installation, Operation, and Field Service Tips

1. Status LEDs

A Green LED is provided and lit when the main 12VDC power to the RM-TIM2 module is ON.

A Red LED is provided at each of the 2 Output Relays R1 and R2 and is lit when the associated relay is energized.

2. Depluggable Terminal Strips The depluggable terminal strips included with the RM-TIM2 make terminations and service easier. Most wiring can be pre-terminated before the RM-TIM2 unit is installed - then just plug everything in and test.

3. Depluggable / Replaceable Output Relays Each of the 2 Output Relays plug into sockets on the RM-TIM2 pc board. This makes each relay easily replaceable in the event of a failure. Unused relays can also be removed and stored as spares. Each relay position includes a retaining clip to secure the relay in the socket. The relays used on the RM-TIM2 are the same relays used on BASE Micro-Series Power Distribution Modules. Replacements are available and stocked at BASE.

Specifications



- Models
 - RM-TIM₂ Terminal Interface Module (Board Only)
 - RM-TIM₂-B Terminal Interface Module mounted in EB-12x08x04 Enclosure
 - RM-TIM₂-BXL Terminal Interface Module mounted in EB-12x12x04 Enclosure
 - RM-TIM₂-2B Dual Terminal Interface Modules mounted in EB-16x12x04 Enclosure
 - RM-TIM₂-PBC Terminal Interface Module mounted on 12x12 Pull Box Cover

• Indoor Temperature Range: -25° C. to +70°C.

Electrical

- Maximum Main Power Input: 12 VDC, 2.5A
- Maximum ARP Power Input: 0-30 VAC/DC, 2.5A
- Maximum Alternate Output Power Input: 0-30 VAC/DC, 2.5A
- RM-TIM₂ only Maximum Current Consumption (both relays energized): 80mA at 12 VDC
- Output Relay Form-C Contact Rating: 10A at 24VDC
- Connections: Depluggable Captive Screw Terminals for #14 to #22AWG Wire

• Size: 5.0 (127.0) wide by 6.0 (152.4) long by 2.0 (50.8) high [inches (mm)]

• Mounting: (6) 1/4 inch high nylon standoffs included
Standoffs and 4-40 Screws included for mounting RM4

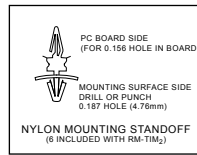
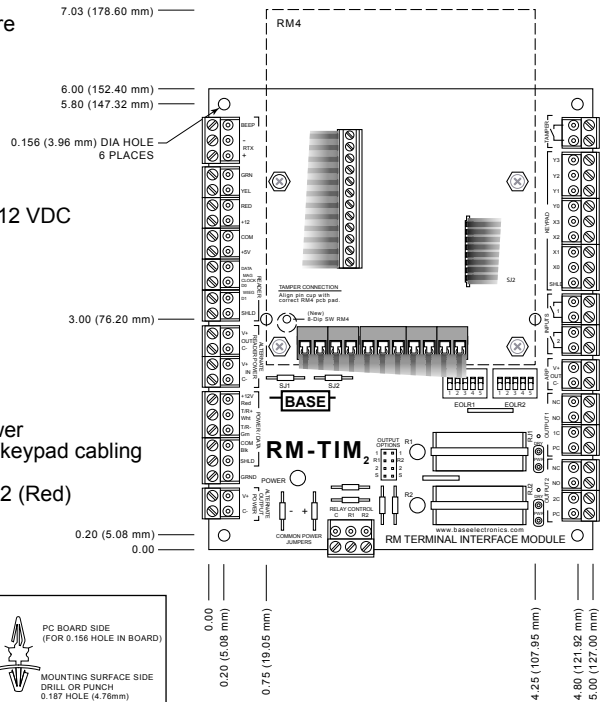
Controls and Indicators

- Relay Configuration Jumpers (2): For selecting Dry or Powered Outputs
- Common Power Jumpers (+ and -): For selecting 12VDC or Alternate Output Power
- Shield Continuity Jumpers (2): For selecting shield continuity from data to reader/keypad cabling
- EOLR select Dip switches (2): For selecting supervision EOLRs or no EOLRs.
- 3 LED Indicators for 12VDC Power (Green), Output Relay 1 (Red), Output Relay 2 (Red)

Special Features

- Local control of Output Relays at Relay Control terminals
- Tamper terminals for connecting External Tamper Switch
- Pre-connectorized flex jumpers for connecting RM4
- Depluggable Terminals - same as supplied with RM4
- Depluggable/Replaceable Relays for maximum serviceability

RM-TIM₂ PC Board Footprint



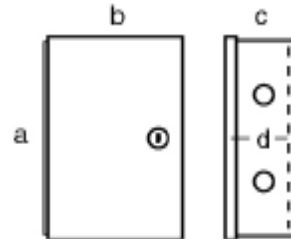
Econo•Box Specifications

- Enclosure Type: UL / NEMA type 1 - Indoor Use Only
- Construction: 16 gauge welded steel
- Enclosure Finish: Phosphate Dipped / Light Gray Powder Coat
- Panel Finish: Phosphate Dipped / White Gloss Powder Coat

Size and Weight

RM-TIM MODEL / EB MODEL	a	b	c	d	PANEL	SHIP WGT
RM-TIM-B EB-12x08x04 KP	12.50	8.50	4.20	3.43	11 x 7	10 lbs
RM-TIM-BXL EB-12x12x04 KP	12.50	12.50	4.20	3.43	11 x 11	12 lbs
RM-TIM-2B EB-16x12x04 KP	16.50	12.50	4.20	3.43	15 x 11	15 lbs

- Tamper Switch: Pushbutton with cheat feature for service testing
Form-C Contacts rated 10Amp at 125/250 VAC
0.187" quik-connect terminals
- Mounting: Holes (4) provided in rear of enclosure
- Panel Mounting: On (4) 1/4-20 studs (hardware included)
- Keylock: 90° Rotation - All enclosures keyed alike
- Knockouts: 8 - 1/2" (2 each side)



Limited Warranty

This RM-TIM is warranted by BASE Electronics against manufacturing defects in materials and workmanship for a period of 2 years from date of purchase. During this period, any warranty repair required will be made at no charge for parts or labor. This warranty does not apply to any work or materials provided by any outside persons or technicians involved in the installation, unauthorized repair, connection, or testing of this product. This warranty does not cover any damage or failure caused by or attributable to Acts of God, abuse, misuse, improper or abnormal usage, faulty or improper installation or maintenance, neglect or accident. BASE Electronics is not responsible or liable for any special, consequential or indirect damages resulting from or in connection with the use or performance of this product as pertaining to economic loss, property loss, costs for removal or installation, or loss of revenues or profit. Except as provided herein, BASE Electronics makes no expressed or implied warranties. The duration of product performance for its intended purpose is limited to the duration set forth herein.

For Warranty or other repair, send the product postage prepaid to BASE Electronics and include Sender's name, company, address, phone and brief problem description. BASE Electronics will notify sender of any required repair costs not covered under this warranty prior to making such repairs.

This Warranty gives you specific legal rights. You may have other rights that vary from state to state.

