HETRONIC

User's Manual

RX_MFS-AC16R

1. TABLE OF CONTENTS

2. CPU PROJECT DESCRIPTION

RX_MFS-AC16_CPU is a 2.4GHz Receiver / Controller board with 15 programmable output channels. Two Controllers are used for Redundant Main Contact cross-checking with dedicated DK31 outputs for enhanced Safety. Two isolated digital inputs are provided for monitoring external processes. Can be stacked with a RX MFS-AC16R PWR board to make a complete receiver. Fits the CHR-2 housing.

The RX_MFS-AC16-2G4 uses a 2.4GHz transceiver for RF reception and transmission. The transceiver uses OQPSK-DSSS modulation. The 2 operation channels (primary and secondary) can be set to 2 of 16 available channels. Additionally, this unit always sends a feedback telegram upon data reception.

The RX_MFS-AC16-2G4 includes a repeater option which can be used to extend the operation range of a complete 2.4GHz remote control system. This option can only be enabled via H-Link.

All programmable options are configurable by 2.4GHz equipped H-Link units.

FCC ID: LW9-RXMFS-AC16R
IC ID: 2119B-RXMFSAC16R

Note: Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Note: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons. The antenna(s) used for this transmitter must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC and IC multi-transmitter product procedures.

Remarque : L'opération est soumis à deux conditions suivantes: (1) ce dispositif ne peut pas causer de brouillage, et (2) ce dispositif doit accepter toute interférence, y compris le brouillage qui peut causer intempestif de fonctionnement du dispositif.

Remarque : L'utilisateur est averti que les changements ou modifications non expressément approuvées par la partie responsable de la conformité pouvaient annuler l'autorisation l'utilisateur à faire fonctionner l'équipement.

Remarque : L'utilisation utilisée pour cet émetteur doit être installée pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes. L'utilisation utilisée pour cet émetteur ne doit pas transmettre simultanément avec une autre antenne ou émetteur, sauf conformément aux procédures de produits multi-transmitter de FAC et IC.

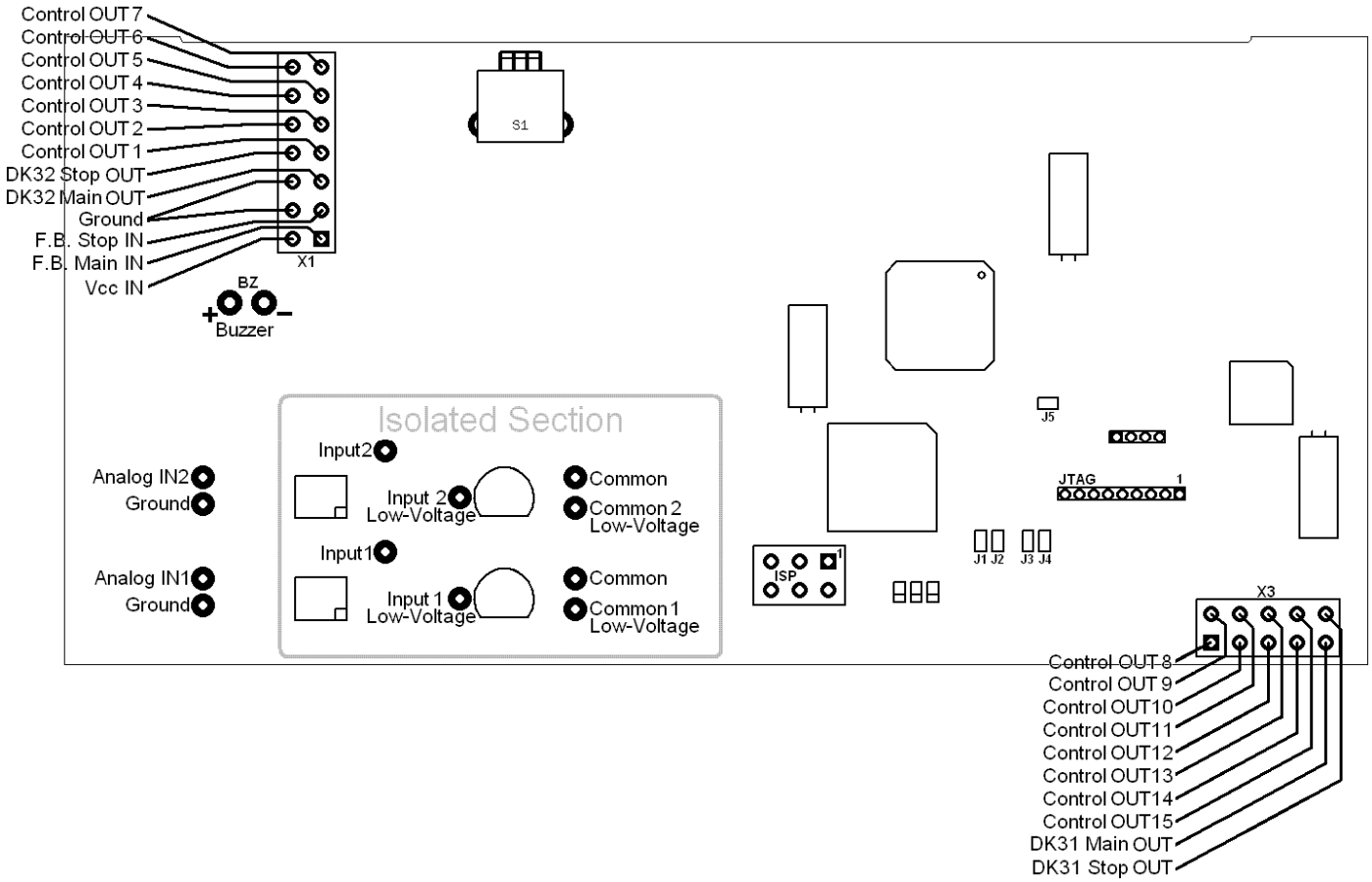
3. CPU TECHNICAL SPECIFICATION

Temperature Range	-25^{o} to $+70^{o}$ Celsius
Supply Voltage Range	6 to 14Vdc
Supply Current	<90mA at 12Vdc input
Outputs	RF: Feedback/H-Link Data 15 Digital Outputs 2 DK 32 Logic Level 2 DK31 Open-Collector Buzzer: Open-Collector 50mA to Vcc
Inputs	RF: Control/H-Link Data ISO Digital - Common to Input1 or Input2: 8 to 240Vdc, 20 to 240Vac ISO Digital (Common1 LV to Input1 LV) 1 to 5Vdc ISO Digital (Common2 LV to Input2 LV) 1 to 5Vdc NOT ISO Analog (Ground to Analog IN1 or Analog IN2) 0 to 5Vdc
Jumpers	J1 through J4: Custom configurations. J5 Open (default): Closed = un-modulated R.F. Transmit Test Mode J5 and J1 closed for modulated R.F. Transmit Test Mode J5 and J1 and J2 closed for R.F. Receive Test Mode

4. CPU CONNECTION DIAGRAM

The following items may be omitted or expanded upon as required.

4.1. Internal Connections



5. CPU ASSEMBLY DESCRIPTION

5.1. Test / Programming Jumper Configuration

J5 closed for un-modulated R.F. Transmit test mode

J5 and J1 closed for modulated R.F. Transmit test mode

J5 and J1 and J2 closed for R.F. Receive test mode.

5.2. Operational Jumper Configuration

All Jumpers Open = Default

J1 through J4 allow for custom configurations.

5.3. Wiring

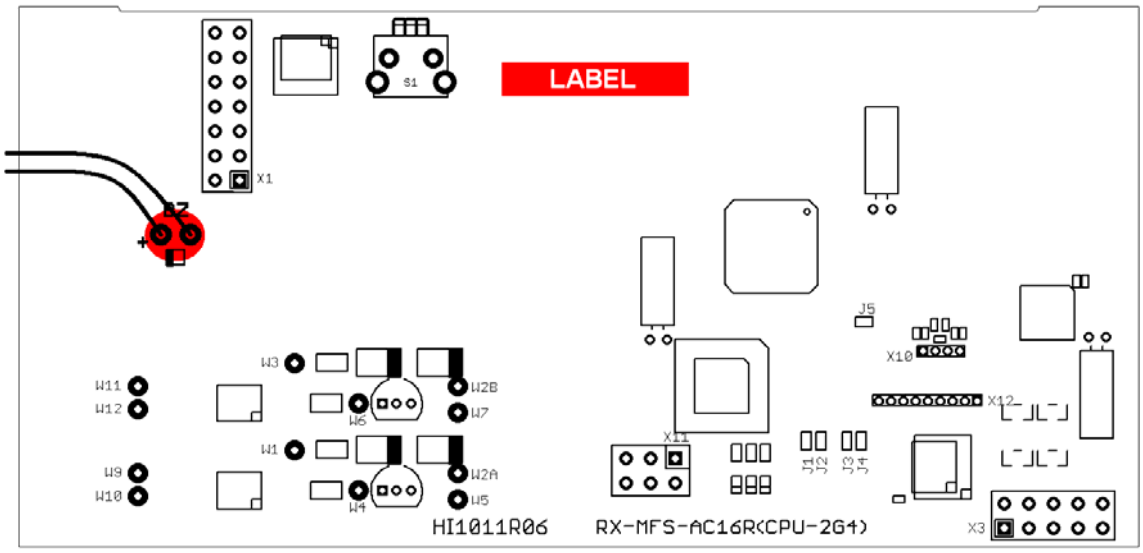
Default wiring configuration includes Buzzer.

Default wiring configuration does not include connections to Digital Inputs.

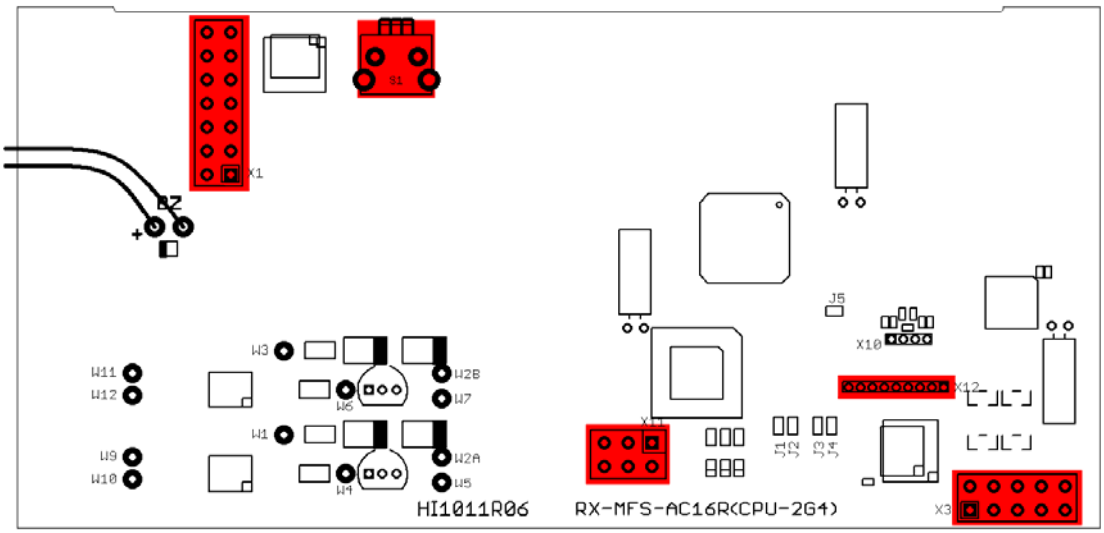
Function	Pad Name	Connector Pin-out	
Buzzer Positive	BZ +	Internal	
Buzzer Negative	BZ -	Internal	
Digi. IN Common	W2A and W2B	22	Isolated- Pads are connected
Digi. IN 1	W1	23	Isolated
Digi. IN 2	W3	24	Isolated
Digi. IN 1 LV Common	W5	option	Isolated
Digi. IN 2 LV Common	W7	option	Isolated
Digi IN 1 LV	W4	option	Isolated
Digi IN 2 LV	W6	option	Isolated
Analog IN 1	W9	option	Warning!! Not isolated
Analog IN 1 Ground	W10	option	Warning!! Not isolated
Analog IN 2	W11	option	Warning!! Not isolated
Analog IN 2 Ground	W12	option	Warning!! Not isolated

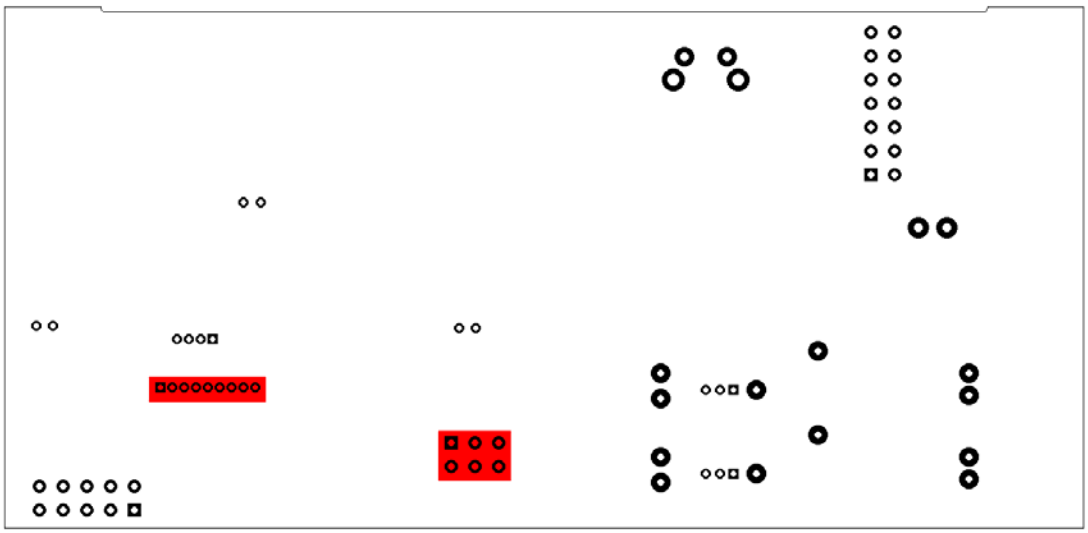
5.4. Glue and Lacquer Masks

- **Glue Placement:**
  Glue Horn wires to CPU board as shown.
- **Label Placement:**
  Place label as shown.



- **Lacquer Mask:**
  Cover the marked areas of the board assembly before lacquering.
  Use only Hetronic approved lacquer.





6. PWR PROJECT DESCRIPTION

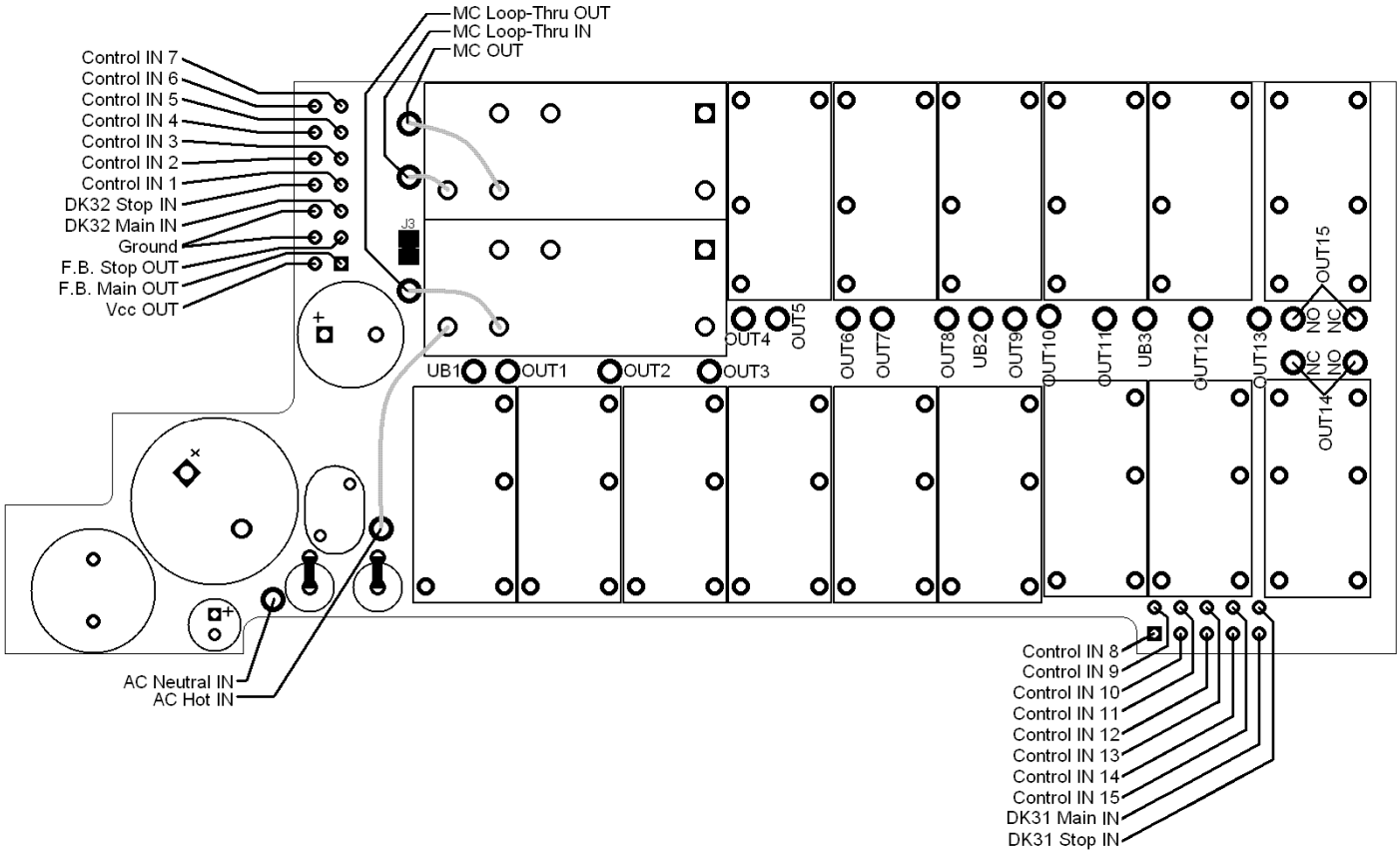
RX_MFS-AC16_PWR is a Relay Board with 16 Outputs. Includes two Safety Relays with feedback signals for redundant, cross-checking Main Contacts, 13 SPST relays and two DPST relays. Coil supply voltage is switched using AND logic. RX_MFS-AC16_PWR can be stacked with a RX MFS-AC16R CPU control board to make a complete receiver. Fits CHR-2 housing.

7. PWR TECHNICAL SPECIFICATION

Temperature Range	-25^{o} to +70^{o} Celsius
Supply Voltage Range	40-240 VAC
Power Supply	10.5Vdc ±20%
Jumpers	J1,2 Fuse Bypass (default open) J3 DK32 Combined (default closed)
Outputs	Vdd = Supply for Relay Coils and CPU board 15 Relay Outputs (5A max each) Two Main Contact (8A Max) with available break-out connection. Main Contact Feedback signals for each Safety Relay
Inputs	Two DK32 – Switched High from Logic Two DK31 – Switched Low from Open-Collector UB1: for Outputs 1 through 8, 40-240 VAC UB2: for Outputs 9 through 11, 40-240 VAC UB3: for Outputs 12 through 15, 40-240 VAC

8. PWR CONNECTION DIAGRAM

8.1. Internal Connections



9. PWR ASSEMBLY DESCRIPTION

9.1. Operational Jumper Configuration

J3 Closed = Default

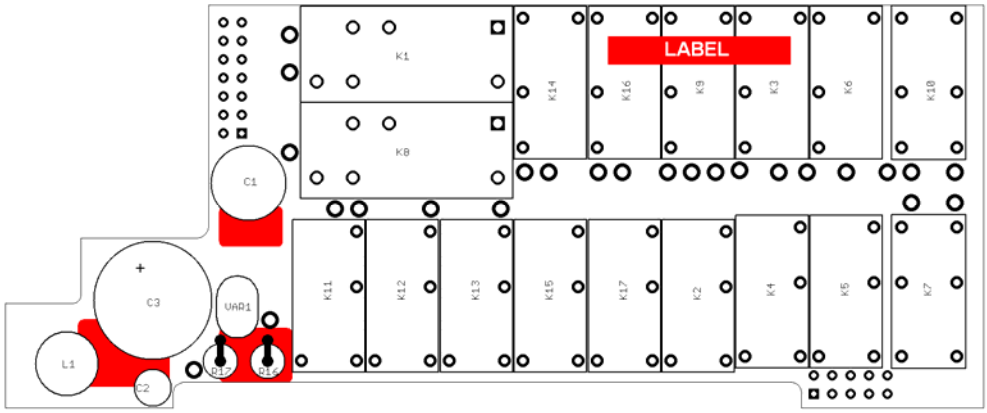
J3 Open = Combined DK32 Switched Output enable.

9.2. Wiring

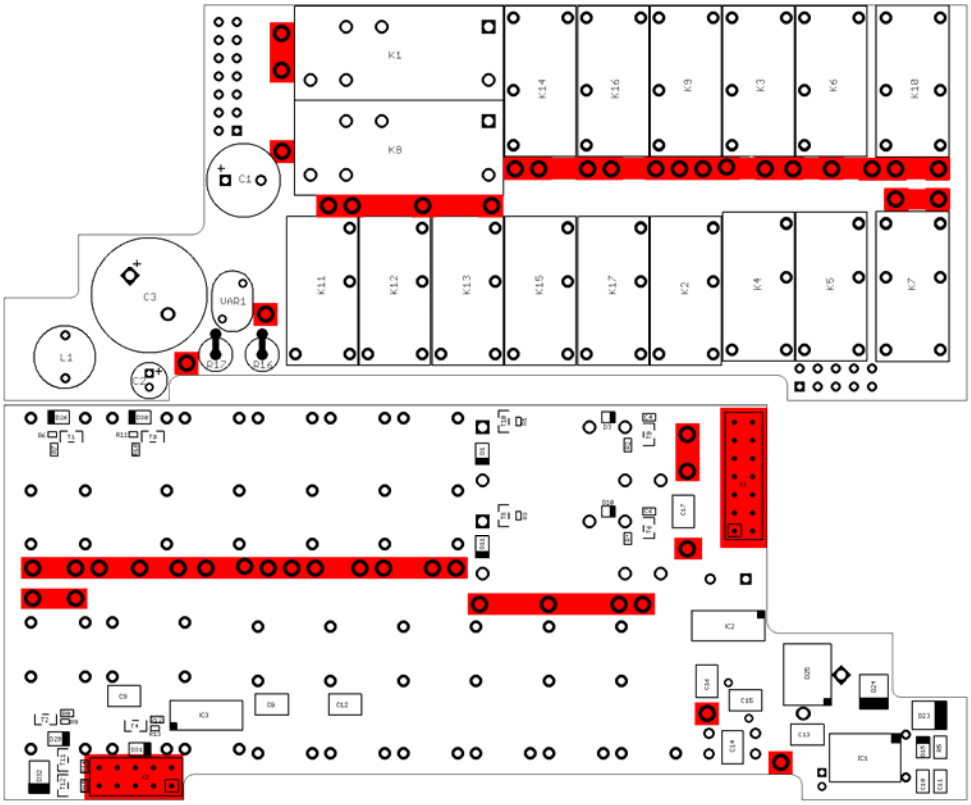
Function	Pad Name	Connector Pinout
AC IN (N)	W1	1
AC IN (L1)	W2	2
MC OUT	W3	3
UB1	W4	4
K1	W5	5
K2	W6	6
K3	W7	7
K4	W8	8
K5	W9	9
K6	W10	10
K7	W11	11
K8	W12	12
UB2	W13	13
K9	W14	14
K10	W15	15
K11	W16	16
UB3	W17	17
K12	W18	18
K13	W19	19
K14 N.O.	W20	20
K15 N.O.	W21	21
MC Loop-Thru	W22	Internal or Break-Out
MC Loop-Thru	W22A	Internal or Break-Out
Digi. IN Common	CPU Brd.	22
Digi. IN1	CPU Brd.	23
K14 N.C.	W20A	option
Digi. IN 2	CPU Brd.	24
K15 N.C.	W21A	option

9.3. Glue and Lacquer Masks

- **Glue Placement:**
  Glue tall components to board as shown.
- **Label Placement:**
  Place label as shown.



- **Lacquer Mask:**
  Cover the marked areas of the board assembly before lacquering.
  Use only Hetronic approved lacquer.



- **Trim Relay lead length to 1.5mm or less:**