



RACO Manufacturing and Engineering Co., 1400 62nd St., Emeryville, CA 94608 (510) 658-6713 800-722-6999 FAX (510) 658-3153

ADDING CONTACT CLOSURE INPUTS TO VERBATIM, VMP-4

The following items should be included in your upgrade kit, except in cases where a particular item is either not required or already in place:

- A VX32 channel expansion circuit card
- A pair of card guides (left and right) with screws
- A pair of EPROM program chips with white U3 & U4 labels
- A pair of high capacity (256k bit) RAM chips U1 & U2
- Extra speech memory chips (no white labels)
- Extra LED array indicators for front panel display
- A chip extraction tool

Since it will be necessary to clear out all memory contents and reprogram the unit, be sure you have written down all your programming and list of messages to facilitate reprogramming.

Be certain to turn the unit off, and also remove the source of 120 VAC power to the unit. Also disconnect the 6 volt gel cell battery, before performing the following steps.

CARD GUIDES:

- Skip this step if your unit already has the slotted plastic card guides in place.
- Referring to the diagram, fit the left hand card guide (the one with the notch at the bottom) over the two studs which protrude on the inside left side of the metal enclosure. These studs accurately position the card guide.
- Fasten the card guide with two 6-32 machine screws.
- Fasten the right hand card guide (with the plastic strip on the bottom) in similar fashion.

EXTRA SPEECH MEMORY CHIPS:

- These chips are provided to add speech recording memory to support your larger number of channels, up to the system limit. They have 28 or 32 pins. They go into the vertically oriented VSP speech card which is located at the very top of the unit.

USING VSP2_ SPEECH BOARD:

- Add speech memory from left to right in the first available spaces. The indentations in the ends of the chips go up.

USING VSPE-1 OR VSPE-2 SPEECH BOARDS:

- With v2.01 or higher program chips- put speech RAM in from left to right, beginning with U103.
- Jumper JB101 must be on the left hand two pins. Maximum of 8 RAM chips.
- With v1.35 or lower program chips, put the first chip in U104 and the second chip in U105 (U103 is skipped). A maximum of 2 chips may be used with this version.
- Jumper JB101 must be on the right hand two pins.

EXTRA LED ARRAY INDICATORS FOR FRONT PANEL DISPLAY:

- Remove the VFP front panel circuit board via 5 machine screws.
- Observe the insulation material and any spacers so that you can restore them in proper place later.
- Unplug the 2-conductor speaker connector but leave the 26-conductor ribbon cable in place.
- Plug the white LED arrays in place in their sockets, beginning with the first empty sockets to the right of the existing group of LED arrays. Orientation does not matter with these LED arrays as long as they are properly seated in their sockets.
- Reconnect the 2-conductor speaker connector Its orientation is not critical, but one way fits more easily than the other.
- Refasten the board to the metal door, restoring all insulators and spacers to their original placement.

VX32 CIRCUIT CARD:

- A new or replacement VX32 card will be included in the kit, configured for the total number of contact inputs you are upgrading to.
- Referring to the diagram, carefully insert the VX32 card into the indicated (lowest) pair of card guide slots, and slide it firmly into place so that its 20 pins fit into connector J4 on the main circuit board.
- CAUTION: If IC chip U3 is in place on the VX32 card, take care when inserting the card that the body of this chip does not catch on the head of the screw which is on the black heat sink on the main circuit board.
- Route the heavy green lightning protection ground wire down to the 120 VAC power terminal strip TS3 on the main circuit board.
- Connect this green wire to the power ground terminal marked "GREEN". Be sure you have temporarily turned off the source of 120 VAC power before you handle wiring on this terminal strip.
- If you have other accessory cards in place, there may be additional green wires from those cards as well.

EPROM PROGRAM CHIPS:

- Remove program chips from sockets U3 and U4 using the enclosed chip extractor tool.
- Replace them with the new U3 and U4 program chips respectively, with the orientation indentations facing upward, after first straightening any bent pins.

RAM CHIPS:

- If your kit includes 256k RAM chips (62256) they should be installed in sockets U1 and U2.

JUMPER BLOCKS:

- JB1 and JB2 configure the sockets U3/U4 and U1/U2 respectively for the size of chip. If your board is VMP-4B or below, the JB2 block will be over the right two pins, and the JB1 block will be over the left hand pins also.
- Exceptions (depending on your particular configuration) are noted below:

JB2

* * *

JB1

* * *

INPUT CONNECTIONS:

- Note that all of your contact inputs need to be wired to their respective terminal strip points on the VX32 card. These terminal strips are unpluggable for convenience.
- With the VX32 card in place, terminal strip TS1 on the lower left corner of the main circuit board is used only for the common return connections to the contact inputs.

SYSTEM MEMORY CLEARDOWN:

- Reconnect the battery.
- Restore the source of 120 VAC power, which will turn the unit on.
- Locate jumper block JB3, which lies immediately below chip U1.
- Momentarily (about 3-4 seconds) make connection between the two pins of JB3 while the unit is turned on. This will clear out all memory contents of the unit back to factory defaults. The unit is now ready to have your programming re-entered.
- The reprogramming may be done at the panel or from a remote telephone.

TROUBLESHOOTING:

- If the unit does not work after you power it up and clear out the memory, it is most likely that one or more plug-in IC chips was installed backward, or with a pin folded under or not properly inserted in its socket.
- If a chip is inserted backward, it can easily be damaged when the unit is turned on.
- If inspection reveals no such problem, turn the unit off and temporarily reinstall your old U3 and U4 program chips, and see if this renders the unit basically operable.

RETURN EXTRA PARTS TO FACTORY:

- To avoid extra charges, return any removed chips or unneeded cards or daughter boards to the factory at the address shown on the letterhead.
- If you have questions, call Raco Customer Support at 800-449-4539. The Customer Support Department will be available from 8:00am to 4:30pm PST, Monday through Friday (excluding holidays).