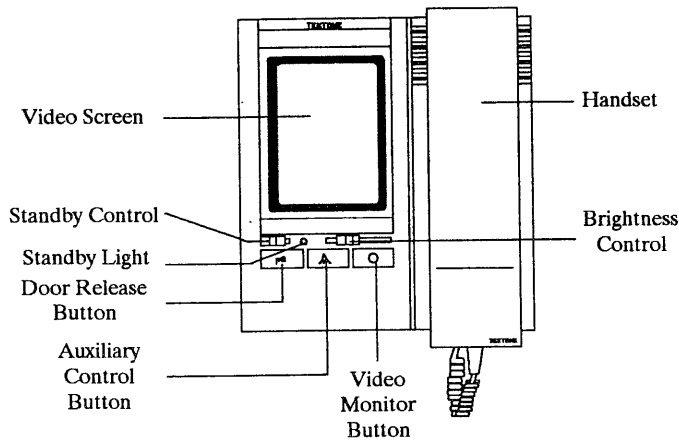
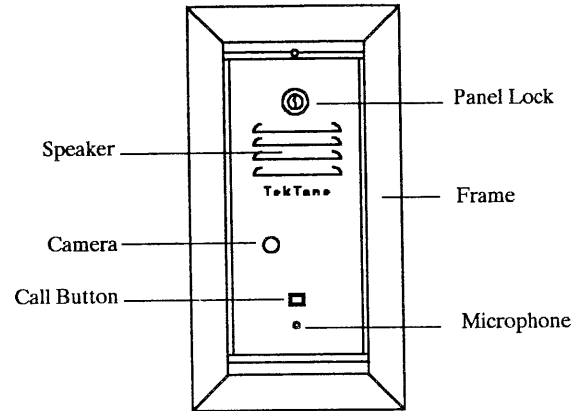


**TekTone® Sound & Signal Mfg., Inc.**  
**Tek-View Video Intercom System**  
**INSTALLATION INSTRUCTIONS**  
**MODELS: VM600A, VM103**



VM103 VIDEO MONITOR



VM600A ENTRANCE PANEL Rev.1

**APPLICATION**

The Tek-View intercom system is a combination of an audio communication system with a video monitoring system. This provides not only audio communication with the caller by the resident, but also visual identification capability.

Audio communication is carried on by means of an amplified handset intercom system in the home and hands-free loudspeaker convenience at the entrance panel. Controlled entry is permitted by means of a push button actuated electric door release.

Each VM103 video monitor is equipped with a preheat, instant-on feature which provides for an immediate picture at the selected monitor. Use of this feature is optional.

**PROCEDURE**

1. Read installation instructions before proceeding.
2. Install housings and wiring.
3. Connect wires and install equipment.
4. Apply power and check operation.

**SYSTEM COMPONENTS**

<u>MODEL</u>	<u>DESCRIPTION</u>
CT090	Wire termination board. One required per VM103.
IH109	Housing (flush) for VM103.
IH109S	Housing (surface) for VM103.
PK310A	Control unit (amplifier/power supply). One required per system.
PK417	Control unit. One required for each additional entrance panel.
SS250	Transformer. 250 VA 16 VAC. One required per PK310A and PK417.
VM103	Video monitor.
VM600A	Entrance panel.
VM200	Video distribution amplifier
WM023	Video coaxial cable (copper braid) RG59U

## EQUIPMENT LOCATION AND HOUSING INSTALLATION

### ENTRANCE PANEL (VM600A) ENCLOSURE:

- A. The entrance panel must not be located in areas of extreme heat or cold where the operating temperature range of 0-40 C might be exceeded or where it will be subjected to moisture or adverse weather conditions.
- B. The entrance panel must be located away from direct sun exposure. Sufficient light must be provided to illuminate the caller at night. A minimum of one 40-watt fluorescent bulb should be installed above the entrance panel. (For best picture quality, source of light should be directed to illuminate subject's face.)
- C. The top of housing should be located approximately 67-1/2" above the finished floor surface to place the camera opening approximately 61" above the finished floor.
- D. One call button is accommodated on the standard VM600A entrance panel which includes OH610A housing. See FIG. 1 for installation details.

### CONTROL UNIT:

Locate the control unit (PK310A amplifier/power supply) in an accessible area. Permitted operating temperature range of 0-40 C should not be exceeded. Location should provide for convenient wire runs to entrance panel and video monitor stations. Maximum wire distance from the control unit is 500' using wire size shown in FIG. 3.

### TRANSFORMER:

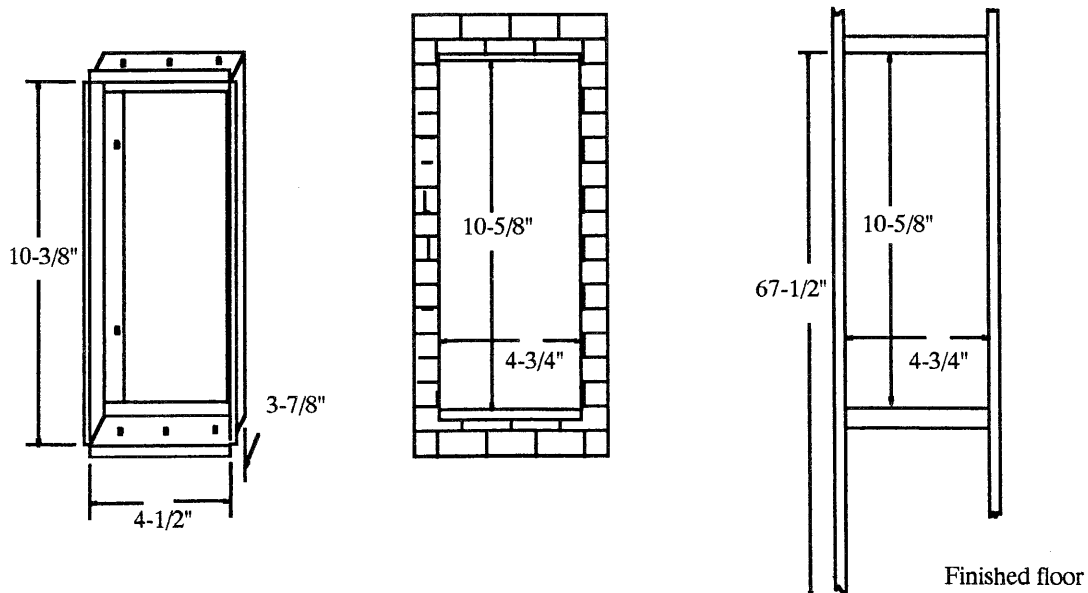
The transformer must be located in an accessible area near a source of 117 VAC and away from extreme heat. The transformer should be kept at least 3' (but preferably not more than 50') away from the PK310A. Observe all local electrical codes.

### VIDEO MONITOR:

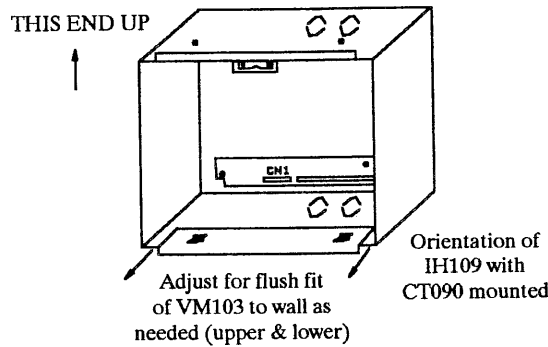
The video monitor must not be located in an area where the operating temperature of 0-40 C may be exceeded or in an environment with high humidity. The top of the VM103 housing (IH109) should be located approximately 66" above the finished floor.

Refer to FIG. 2 and VM103 equipment installation notes for installation of IH109 housing.

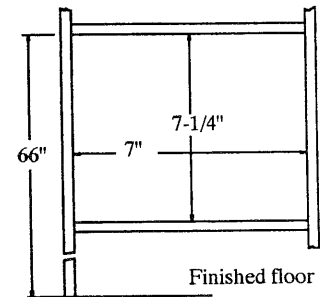
FIG. 1 OH610A ENTRANCE PANEL HOUSING



**FIG.2**  
**IH109 Video Monitor Housing**  
 Overall Dim.: H: 7-1/2"; W: 6-15/16"; D:  
 3-1/2"



**ROUGH-IN FRAMING DETAIL**



## WIRING INSTRUCTIONS

Run wires according to **WIRING LAYOUT DIAGRAM (FIG. 3)** in conjunction with the following notes.

- A. Each VM103 housing (IH109) is supplied with a wire termination board (CT090) which includes a 75 ohm, 1/2 watt, noninductive end of line resistor. Resistor **MUST BE** cut if unit is not end of line. **DO NOT** cut resistor on unit at end of line.
- B. The maximum number of VM103 monitors is three when using one PK310A. For additional monitors, consult factory.
- C. The **WIRE TERMINATION BOARD (CT090)** provides connecting terminals for the VM103. Terminal functions are as follows:
- |         |   |  |
|---------|---|--|
| 1 and 2 | : | Microphone for handset connects to 1,2 on PK310A.  |
| 3 and 6 | : | Receiver for handset connects to 3,6 on PK310A.  |
| 4 (LL)  | : | Ring terminal. (Selective wire which connects to individual push button at entrance for ringing unit 1 KHz tone signal. Also detects tone and turns monitor control circuits on for 1 minute.) |
| CT      | : | Control terminal. (When terminal 4 or LL detects a tone, CT also goes high - approx. 10-12 VDC. This system common connects to CT at PK310A which turns power on to camera via CP and CN.)     |
| ST      | : | Preheat terminal. (When this terminal is jumpered to +, it will preheat picture tube to instant-on feature.)   |
| LE      | : | Lighting terminal. (Used for optional lighting at entrance panel. Requires additional control unit and additional system common.)  |
| +       | : | +17 VDC for connection to PK310A terminal P.   |
| -       | : | Ground for connection to PK310A terminal N.  |
- D. The **CONTROL UNIT (PK310A)** provides connecting terminals with the following functions:
- |           |   |  |
|-----------|---|--|
| 1 and 2   | : | Input from microphone of VM103 handset. Balance input.   |
| 3 and 6   | : | Audio output to receiver on VM103 handset.   |
| M and G   | : | Microphone input. Polarity sensitive.  |
| Z         | : | 1 KHz OCS tone output for ringing monitors.  |
| W         | : | Reset terminal for power supply. Shorting this terminal to - will interrupt +17 VDC for approximately 2 seconds.       |
| S and C   | : | Audio output to speaker at entrance panel (VM600A).  |
| L         | : | Door strike output 16 VAC 1 AMP.   |
| N         | : | - Neg. for +17 VDC.  |
| P         | : | +17 VDC output for monitors @ 3 AMP maximum regulated.   |
| T1 and T2 | : | 16 VAC input 250 VA  |
| CT        | : | Control terminal common voltage coming from monitors CT terminal. Energizes relay for camera output voltage CP and CN. |
| CP        | : | +15 VDC output for camera. Voltage is only present when CT terminal has approximately 10-12 VDC.                       |
| CN        | : | Ground for camera voltage.   |

- E. The DISTRIBUTION AMPLIFIER (VM200) provides connecting terminals with the following functions:
- 1 : Input terminal for connection from camera output.
  - 2 : Video output terminal for one riser.
  - 3 : Common connection for turning system on. (Connects to PK310A control unit terminal CT)
  - 4 : Common connection for turning on VM200. (Connects to all VM103 monitors receiving video feed from VM200.)
  - 5 : Video output terminal to other VM200s. (Comes directly from camera output. Cut jumper wire beside terminal 5 if used.)
  - 6,7,8 : Video output terminals for one riser each.
- F. Wire gauge sizes for common wires only are as follows:
- +, -, CT : Minimum 18 gauge.
  - 1,2,3,6 : Two twisted pair 22 gauge. Must be shielded pairs if not in metal conduit.
- Intercom common wires must be routed away from fluorescent lights and AC lines. For distances of greater than 500 feet use 20 gauge wire. Maximum distance from amplifier for communication wires is 1000 feet. Connect shields to terminal 3 on PK310A only.
- G. Wire gauge size for selective wire (4 [LL]): 22 gauge. Wire gauge size for camera wires (CP,CN): 18 gauge. Unless specified, all other wires: 22 gauge.
- H. Use 16 gauge wire to connect control unit to the transformer. If wire length is greater than 50 feet, use 14 gauge wire.
- I. For wire length of more than 100 feet, run all power supply wires (+ and -) directly to the control unit location. For wire length greater than 200 feet, use 16 gauge wire.
- J. Use 2 cond., #18 cable for door release wiring. If release is located more than 50 feet from the control unit, use #16 wire.
- K. The control unit (PK310A) is rated for 3 AMPS at 17 VDC. Microphone wiring must be shielded cable and the shield must be connected to terminal G.

FIG. 3 WIRING LAYOUT DIAGRAM

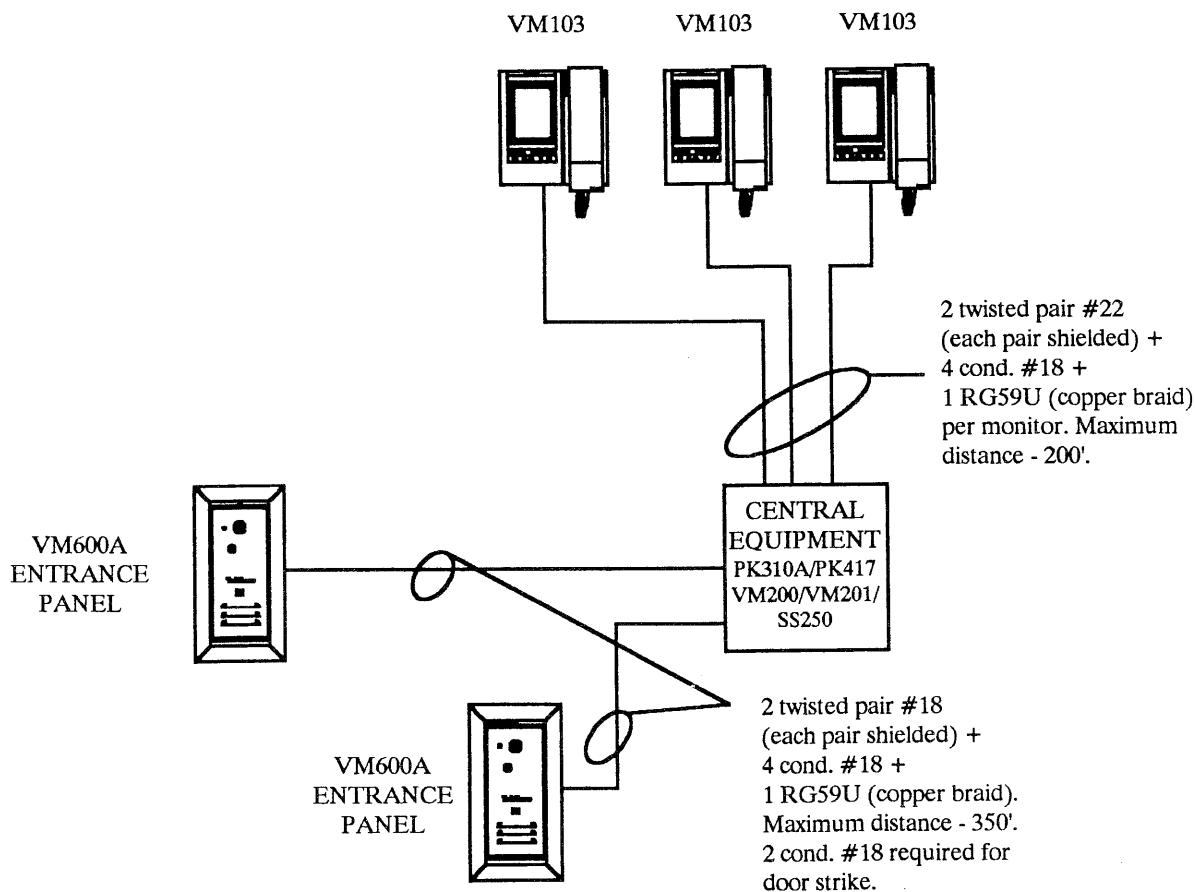
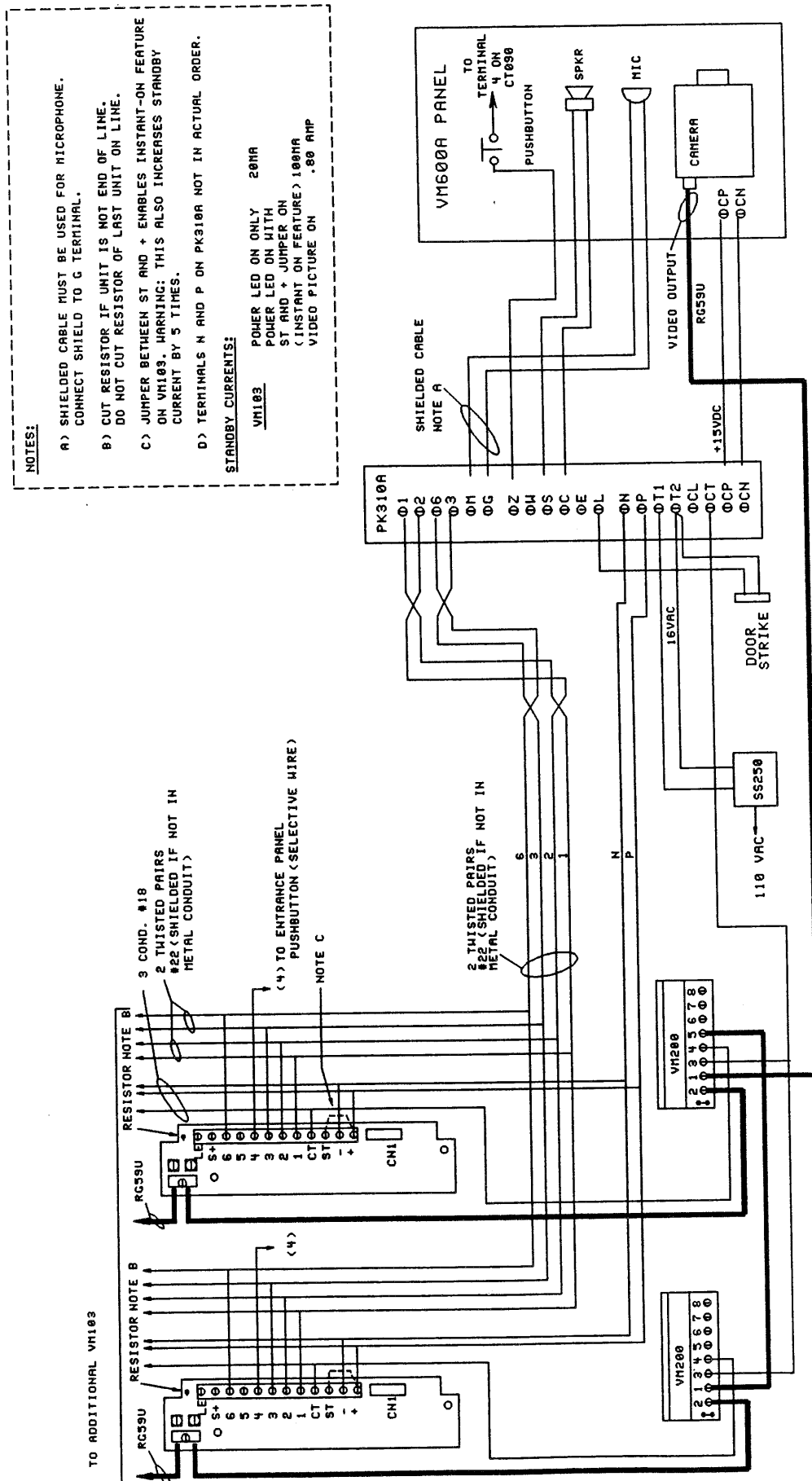


FIG. 4 CONNECTING DIAGRAM



TO ADDITIONAL VH103

RESISTOR NOTE B

9 COND. #18  
 2 THISTED PAIRS #22 (SHIELDED IF NOT IN METAL CONDUIT)

(4) TO ENTRANCE PANEL  
 PUSHBUTTON (SELECTIVE WIRE)  
 NOTE C

2 THISTED PAIRS #22 (SHIELDED IF NOT IN METAL CONDUIT)

SHIELDED CABLE  
 NOTE A

PK310A

Ø1

Ø2

Ø6

Ø3

ØG

ØZ

ØH

ØS

ØC

ØE

ØL

ØN

ØP

ØT1

ØT2

ØCL

ØCT

ØCP

ØCN

VH200

2 1 3 4 5 6 7 8

1 0 0 0 0 0 0 0

VH200

2 1 3 4 5 6 7 8

1 0 0 0 0 0 0 0

SS250

110 VAC

DOOR STRIKE

16VAC

+15VDC

RC59U

VIDEO OUTPUT

OCP

ØCN

CAMERA

SPKR

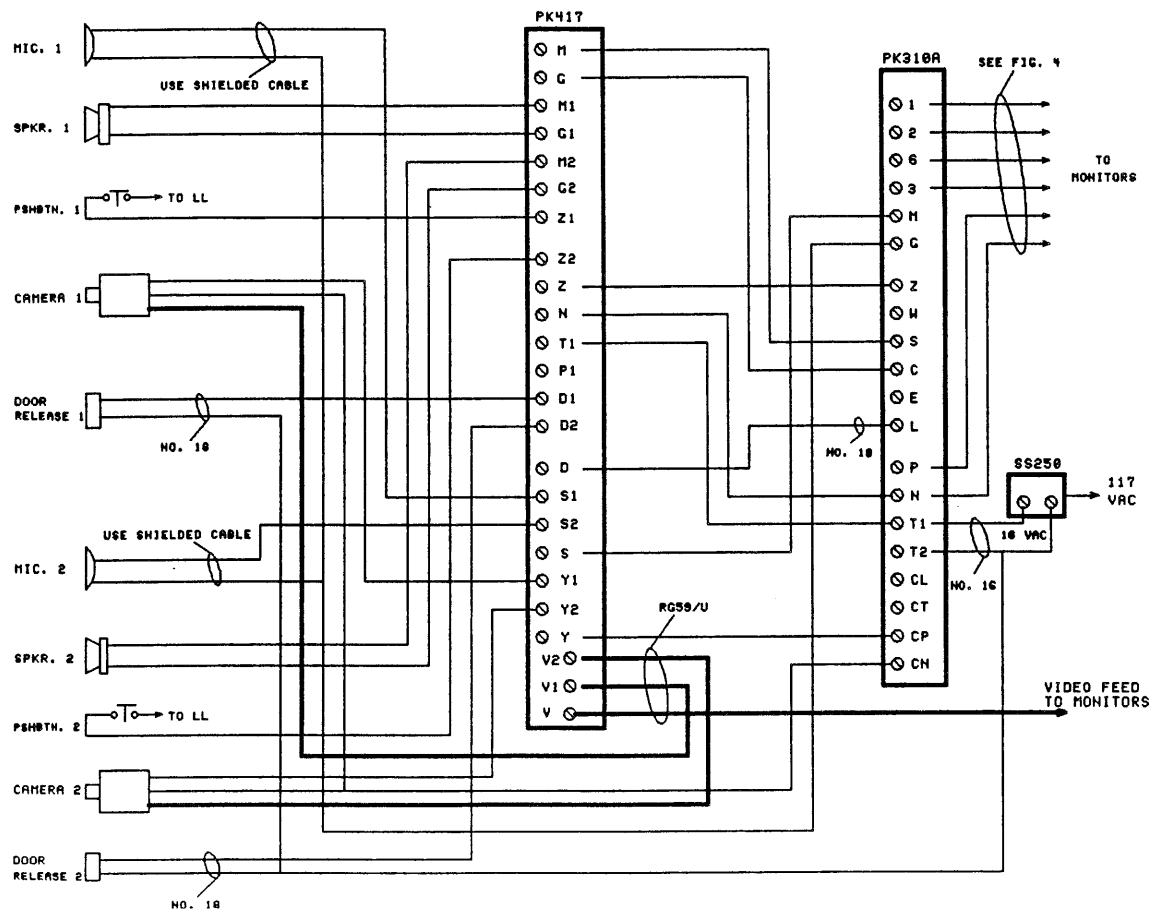
NIC

PUSHBUTTON

TO TERMINAL 4 ON CT090

VM600A PANEL

FIG. 5 CONNECTING DIAGRAM - DUAL ENTRANCE



- NOTES:
1. Use 16 VAC transformer connection.
  2. Connect shield for microphone cable to G terminal on PK310A.
  3. For additional instructions, see FIG. 4.

## WIRE CONNECTIONS AND EQUIPMENT INSTALLATION

Check all wires for shorts to each other and for grounds. Connect all wires (EXCEPT 117 VAC CONNECTIONS TO TRANSFORMERS) as shown in the connecting diagram FIG. 4 and in accordance with the wiring instructions. Refer to FIG. 5 for dual entrance wiring.

### ENTRANCE PANEL (VM600A):

- A. Install frame into housing.
- B. Connect all wires necessary as shown in connecting diagram FIG. 4. Refer to FIG. 5 for dual entrance wiring.
- C. Connect coaxial video cable (RG59U) to the camera cable connector on the back of the camera. Connect the remaining wires from the cable connector to CN and CP to supply power.
- D. Install the front panel into frame.

### VIDEO MONITOR (VM103):

- A. Connect all necessary wires as shown in the connecting diagram FIG. 4. Refer to FIG. 5 for dual entrance wiring. IH109 housing includes four knock-out holes for cable inlet.
- B. Mount the VM103 to the IH109 housing using the following procedure:

1. Plug the connector from the VM103 into the receptacle on the wire termination board (CT090) noting the correct polarity.
2. Interlock hook located at the bottom of VM103 unit with catch located at the bottom of IH109 housing. Push the top of the VM103 toward the top of the IH109 housing until the monitor chassis snaps into clip at top of IH109. If monitor has been installed properly, bottom of monitor cannot be pulled away from housing.

NOTE: The IH109 is equipped with two slotted brackets located at the top and bottom of the housing. The brackets are secured to the housing with four screws. Screws may be loosened and brackets adjusted if necessary for a flush fit of the VM103 to the finished surface. See FIG. 2. Secure IH109 to stud using holes provided on housing sides.

3. Tighten screw located at bottom of VM103 unit.
4. Switch the standby control (small white switch just below lower left corner of video screen) to the OFF (left) position until ready to make initial tests on the system.

#### TRANSFORMER (SS250):

- A. Connect transformer 16 volt terminals to PK310A, terminals T1 and T2. Connect transformer primary to 117 VAC observing all applicable electrical codes.

### SYSTEM CHECK-OUT

Check entire system according to the operating instructions, turning each monitor on individually so that if a problem exists it may be easily identified. If the system does not operate as indicated, refer to Trouble Shooting section.

### OPERATING INSTRUCTIONS

#### A. AT ENTRANCE PANEL:

1. Press button located on entrance panel.
2. Reply in a normal voice when spoken to. Reply is hands free.
3. When door release buzzes, enter through door.

#### B. AT SUITE STATION:

1. When call tone is heard, pick up intercom handset.
2. Adjust picture brightness as necessary using the slide control located just below lower right corner of video screen.
3. Identify caller on the video screen and converse with them.
4. The door may be opened by pressing the door release button or by depressing completely the hook switch located underneath the handset.

Each monitor stays on for approximately one minute when called. If instant-on feature is used, an immediate picture will appear. Without instant-on feature, picture is delayed approximately five seconds. When the door release is activated, the monitor will shut off.

Calls may also be initiated from the VM103 by pressing the video monitor button. This activates the camera and may be used to re-initiate a call that has been canceled or to monitor the entrance panel. The monitor will stay on for approximately one minute. Only one monitor at a time should be on using video monitor button.

If standby control is switched ON, red LED will light and monitor will remain on standby, ready to operate when a call is placed from the entrance panel. If no video contact with the entrance is desired, the standby switch may be turned OFF. Audio communication will still operate in the normal manner.

The auxiliary control button on the VM103 unit is reserved for auxiliary devices. Contact TekTone® or your factory representative for details.

## SYSTEM MAINTENANCE

### CONTROL UNIT (PK310A):

Each PK310A has a 5 AMP, 3AG fuse as an overload protection. Replace this fuse with same type and rating only. If this fuse continually opens, check for wrong wiring or equipment failure.

### VIDEO MONITOR (VM103):

Refer to FIG. 6 for internal adjustment locations.

## TROUBLE SHOOTING

### SYSTEM:

Check for 15 - 18 VDC on PK310A terminals P and N. This voltage should also appear between the + and - terminals of all video monitors. NOTE: The PK310A has an electronic current limiter that will shut the unit off in the presence of a short circuit on the output terminals. When the short is removed, the output should appear again. The current limiter will also act in case of an overload (too many monitors), which will cause the output to switch on and off rapidly. This may be noticed only if all monitors are turned on.

If power supply function is satisfactory and if monitors turn on (screen lights up) but no picture is seen, the camera may be checked by connecting a monitor directly. If the camera does not turn on, check for 15 VDC on camera terminals CP and CN, then check for 10 VDC on PK310A terminal CT (terminal N is negative). Terminal CT voltage comes from the video distribution system.

Problems with the video distribution system are usually due to wrong wiring. Check that CT terminal on each video monitor connects directly to the distribution amplifier (VM200) that is feeding the video signal. This is necessary because the VM200 is turned on by the connection from the CT terminal on the active monitor to VM200 terminal 4. Terminal 3 on the VM200 connects to PK310A terminal CT to turn on the camera.

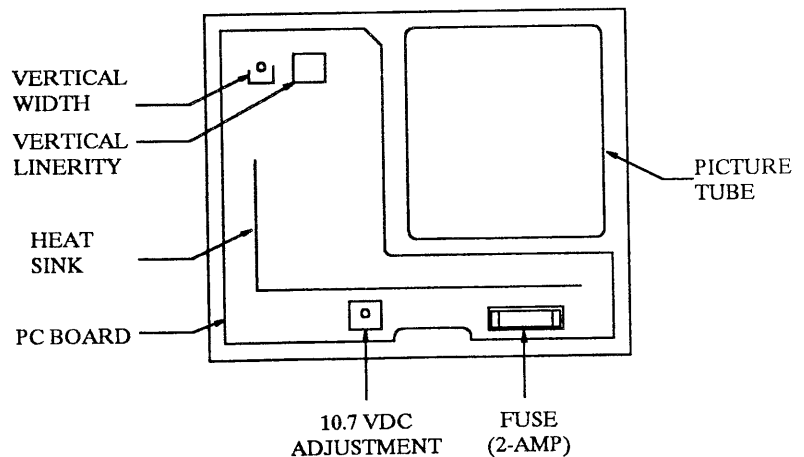
### INTERCOM:

Wrong wiring is the cause of most intercom problems. The PK310A may be checked by disconnecting the common wires and connecting a monitor directly, and then checking communication. The telephone operation is independent of the video section and should operate even if the video does not. The use of twisted pair wiring as shown on the connecting diagram FIG. 4 is essential for operation.

### VIDEO MONITORS:

Video monitors are best checked by substitution. Internal adjustments are available in the monitor to correct vertical linarity and vertical width problems. See FIG. 6 for adjustment locations. The 10.7 VDC control should not normally need adjustment. If red standby light is not illuminated when unit is turned on and if +17 VDC is present, check 2-amp fuse.

FIG. 6 VM103 REAR VIEW



42 Central Drive  
Farmingdale, NY 11735-1202  
TOLL-FREE 1-800-666-4800

Phone (631) 777-5500 Fax: (631) 777-5599  
Email: [info@alpha-comm.com](mailto:info@alpha-comm.com)  
Internet: <http://www.alpha-comm.com>