INSTALLATION INSTRUCTIONS

LKP-957

Monitor Keypanel

RTS™

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SECTION 1

LKP-957 KEYPANEL INSTALLATION

1.1 GENERAL

The keypanel installation procedure consists of:

1. Unpacking and inspecting the equipment.

2. Setting the keypanel DIP switches.

3. Mounting the keypanel in an equipment rack or bay.

4. Connecting the keypanel to the intercom system.

5. Connecting any other optional equipment.

6. Powering up the keypanel and checking operation.

1.2 UNPACKING AND INSPECTION

There should be one power cord for each keypanel. Other optional accessories may also be packed in the container.

As soon as possible after receipt, inspect the container and its contents for physical damage that may have occurred in shipping. If damage has occurred, immediately (within 24 hours of receipt of equipment) contact the carrier involved and file a claim. Save all packing materials, and request an immediate inspection by the carrier's insurance claims agent.

Notify the RTS Systems shipping department if a shipment has been damaged in transit. Notify the RTS Systems sales department if equipment is to be returned for repair, or if a warranty claim is to be made. A return authorization number, issued by the sales department, is required for all items returned to RTS.

1.3 SETTING THE DIP SWITCHES

The DIP switches are located on the back of the keypanel. They control the following functions:

1.3.1 DISPLAY TYPE SELECTION

SW1-1 selects the keypanel display type:
  Open: Alpha-numeric displays
  Closed: LED displays (not applicable on the LKP-957)

SW1-2 and 1-3 are not used, and the positions do not matter.

1.3.2 LOGICAL KEYPANEL NUMBER

SW1-4 to SW1-7 select the logical keypanel number.

To set the logical keypanel number on a keypanel:

1. Determine the intercom audio channel number that the keypanel will be connected to.

2. For channel numbers ending in 1 through 9, the logical keypanel number is the last digit of the channel number. If the last digit is zero, use 10 as the logical keypanel number.

3. After determining the logical keypanel number, set DIP switches SW1-4 to SW1-7 using Table 1-1.

1.3.3 BAUD RATE

SW1-8 selects the baud rate for communication with the intercom matrix.
  Open: 9600 baud (CS9500 Intercom Systems only)
  Closed: 76,800 baud (CS9600 and CS9700 Intercom
    Systems only)

Table 1-1
DIP Switch Settings for Logical Keypanel Numbers

Logical Keypanel Number	DIP Switch Settings			
	SW1-4	SW1-5	SW1-6	SW1-7
1	Closed	Open	Open	Open
2	Open	Closed	Open	Open
3	Closed	Closed	Open	Open
4	Open	Open	Closed	Open
5	Closed	Open	Closed	Open
6	Open	Closed	Closed	Open
7	Closed	Closed	Closed	Open
8	Open	Open	Open	Closed
9	Closed	Open	Open	Closed
10	Open	Closed	Open	Closed

1.4 MOUNTING THE KEYPANEL AND EXPANSION PANELS

Keypanels may be mounted in any industry standard 483 mm (19") wide equipment rack. For all panels, allow an additional 2 to 3 inches in back for cables and connectors. No special tools other than those found in a typical tool kit are required for mounting. The keypanels have no special ventilation requirements.

1.5 CONNECTIONS

1.5.1 CONNECTION TO INTERCOM MATRIX

Use either FRAME connector to connect the keypanel to the intercom system. The two connectors are wired in parallel, and only one should be used. Connector pin-outs are shown in Tables 1-2 and 1-3. Figure 1-1 shows the cable wiring diagrams.

Table 1-2
DE9S FRAME Connector Pin-out

Pin	Function
1	RS422 Data "+"
2	RS422 Data "-"
3	Ground, Shield Input
4	Audio Output "+"
5	Audio Output "-"
6	Ground, Shield Data
7	Audio Input "-"
8	Audio Input "+"
9	Ground

Table 1-3
RJ-11 FRAME Connector Pin-out

Pin	Function
1	RS422 Data "-"
2	Audio Input "+"
3	Audio Output "+"
4	Audio Output "-"
5	Audio Input "-"
6	RS422 Data "+"

1.5.2 OPTIONAL CONNECTIONS

1.5.2.1 HEADSET Connector

Table 1-4 lists the HEADSET connector pin functions.

Table 1-4
HEADSET Connector Pin-out

Pin	Function
1	Dynamic mic "+" input
2	Dynamic mic common (shield)
3	Carbon mic "+" input
4	Carbon mic common (shield)
5	Headphone "+"
6	Dynamic mic "-" input
7	HDST switch control
8	HDST switch common
9	Headphone common

Figure 1-1. Keypanel to Matrix Interconnect Cables

NOTES

1) 3 PAIRS TWISTED TELCO CABLE.

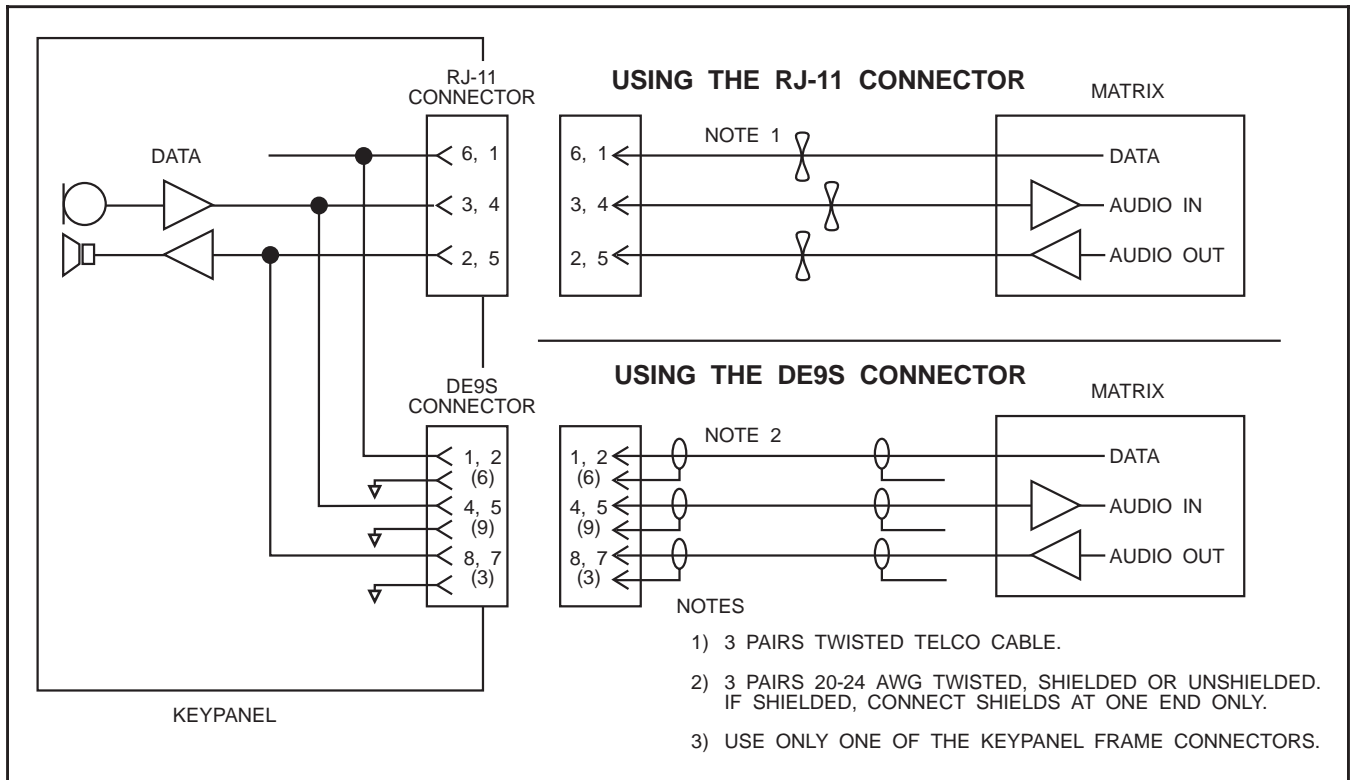2) 3 PAIRS 20-24 AWG TWISTED, SHIELDED OR UNSHIELDED. IF SHIELDED, CONNECT SHIELDS AT ONE END ONLY.

3) USE ONLY ONE OF THE KEYPANEL FRAME CONNECTORS.

1.5.2.2 Terminal Block Connections

(Reference Figure 1-2)

AMP OUT "+" and "-" : These terminals provide the keypanel audio amplifier output signal to drive an 8-ohm, 3-watt speaker. As supplied from the factory, jumpers connect these terminals to the SPKR IN "+" and "-" terminals. Remove these jumpers only if the keypanel audio output is to be redirected to an external speaker.

SPKR IN "+" and "-" : These terminals connect to the internal speaker.

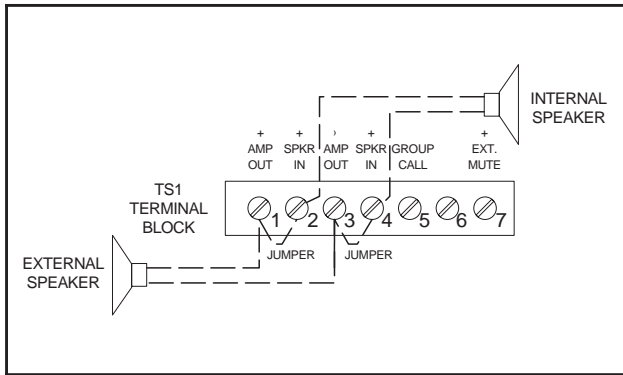Note: The GRP CALL terminal is not used on the LKP-957 panel.

Figure 1-2. Optional Terminal Block Connections

1.6 POWER-UP AND OPERATIONAL CHECK

Note: Prior to checking operation, you may want to first assign the LKP-957 listen keys to the channels that the LKP-957 will be monitoring. (See "Keypanel Key Assignment" in Section 2 of the CSedit Manual.) Note that unlike a standard keypanel, the LKP-957 displays listen key assignments instead of talk key assignments. Therefore, the key assignments should be entered in the Listen "L" column. Also note that it is possible for keypanels that do not have keys assigned on the LKP-957 to call the LKP-957 and be heard on the loudspeaker. If desired, this may be prevented by restricting crosspoints. (See "System Menu, Force and Inhibit" in Section 3 of the CSedit Manual.)

1.6.1 POWER-UP SEQUENCE

Plug in the ac power cord at the back of the LKP-957 keypanel.

Turn on the power switch next to the power cord connector.

Observe the power-up sequence:

When power is turned on, all alpha-numeric displays will first display asterisks (∗∗∗∗) then dashes (----). After a few moments, the *Listen* key assignments will display. If no *Listen* key assignments have yet been programmed, the displays will continue to show dashes (----).

If the keypanel cannot establish data communications with the intercom system, the alpha-numeric displays will continue to show asterisks (∗∗∗∗). Check the data line connections to the FRAME connector.

The keypanel may display the normal *Listen* key assignments, but these may be periodically interrupted by dashes (the interruptions may occur at intervals of one or two minutes). This indicates a conflict between two keypanels set to the same logical keypanel number on the same data port. Recheck the logical keypanel number switches on this keypanel. If they appear correct, it will be necessary to locate the other keypanel causing the conflict. See *Correcting a Logical Keypanel Number Conflict*.

1.7 CORRECTING A LOGICAL KEYPANEL NUMBER CONFLICT

1. Turn off the power switch at the keypanel you just connected. All other keypanels should be operational.

2. Using CSedit, turn on the tone generator for this keypanel's port number. (From the CSedit Keys menu, select Key Panels, then select the appropriate Panel number. When the keypanel's setup screen appears, tab to the window at the upper-right corner of the screen and select "Tone". Use the space bar to place a check mark in the Tone field.)

3. Locate the keypanel(s) emitting a 400 Hz tone. (You may have to turn up the volume controls on keypanels.)

4. Turn off power to that keypanel, and reset the logical keypanel number DIP switches to the correct setting. Then, turn the power switch back on.

5. Turn power back on at the first keypanel, and recheck the power-up sequence.

6. Turn off the tone generator from CSedit.

SECTION 2

LKP-957 KEYPANEL ELECTRICAL ADJUSTMENTS

2.1 GENERAL

The following paragraphs describe the procedure to calibrate the input level to the factory standard of +8 dBu. If a different level is required, substitute that level for +8 dBu.

Audio levels may be adjusted with the panel disconnected from the intercom system. However, proper operation should be confirmed when the panel is re-connected. If levels change after re-connection, check the intercom system wiring for one-sided shorts to ground, wiring errors, or unintended terminations.

2.2 MATRIX-TO-SPEAKER GAIN

1. Disconnect the loudspeaker (either internal or external) from the **+ AMP OUT** and **- AMP OUT** terminals on the back of the keypanel.

2. Terminate the **+ AMP OUT** and **- AMP OUT** terminals with an 8-ohm, 10-watt resistive load. Connect an audio analyzer across the load.

3. Remove the keypanel audio connection from the intercom matrix.

4. Insert a +8 dBu (1 KHz) signal into the audio input "+" and "-" pins of the FRAME connector, P10 (Table 1-2).

5. Turn the front panel HDST switch off.

6. Turn the front panel intercom audio level control (outer knob) fully clockwise (maximum volume).

7. Adjust the SPKR trimpot (RV207) to measure 4.9V RMS (3 watts) at the audio analyzer. There should be no clipping of the output signal.

8. Turn the front panel intercom audio level control fully counter-clockwise (minimum volume). Adjust the MIN I/C trimpot (RV202) to measure -30 dB below the 4.9V AC reference level.

9. Readjust the front panel intercom audio level control to again measure 4.9V AC at the audio analyzer.

10. Insert a 1 KHz common mode signal into the audio input "+" and "-" pins of the FRAME connector.

11. Adjust RV201 (internal) for a minimum common mode signal.

12. Remove the signal from the FRAME connector.