

58,59 +5-V 250-mA available  
 60. **Ground.** Use both grounds on all PC boards.

**TABLE IV**

KEYBOARD CONNECTOR PINOUTS

- A. +12 volts for keyboard if needed (or -12 with jumper)
- B. +5 volts for keyboard via CLEAR (HOME) switch
- C. KEYPRESSED Normally +. Grounding enters
- D. INPUT A1
- E. INPUT A2
- F. INPUT A3
- G. INPUT A4
- H. INPUT A5
- I. INPUT A6
- J. INPUT A7
- K. SPARE
- L. GROUND

**Inputs A1 thru A5 Must  
 be Grounded during CLEAR  
 (HOME) cycle.**

All Inputs TTL Compatible. Fits any PC edge connector with 0.156" contact centers or may be directly soldered to flat cable or harness assembly.

**WARNING: DO NOT ALLOW ANY INPUT VOLTAGE TO EXCEED PIN B VOLTAGE (Internal +5) OR GO BELOW GROUND.**

**TABLE V**

WHAT DO THE ROCKER SWITCHES DO?

- OFF-ON (S1)** When this switch is forward, 110 Vac power reaches the transformer. Power is removed with the switch backwards.
- LINE-FULL (S2)** This switch decides whether a normal full scan is to be displayed or whether a single line or a group of lines is to be shown. In the FULL SCAN (normal operation); pin No. 36 is left open. In the LINE SCAN operation, pin No. 36 is connected to a selected optional clock of timing that forces reset of the one-and-only-one IC7 on the cursor. Extra timing is needed for line scan and varies with the application. A ground is also optionally placed on line No. 32 when in the LINE scan position. For normal use, the switch should be left in the line full position.
- A/B (S3)** This switch decides which page is to be displayed and which page is to allow character entry. Half the switch controls the output enable or bus access of a memory and half of the switch works with the page protect to allow character entry. Program jumpers on memory A and memory B boards set up which board does what. You normally enable and load the *same* board, except for electronic notebook use. +5 on the enable lines connects you to the output bus. A ground on the PROTECT lines prevents character entry.
- KEEP-CHANGE (S4)** This is the memory protect switch and overrides S3 by forcing a ground on both the A enable and B enable lines in the PROTECT position.

**REPEAT (S5)**  
 (momentary)

When forward, the blinker clock is applied in place of the conditioned keypressed input, adding characters or moving the cursor at 4 places per second. In its normal position the TV typewriter advances one character for each character entered.

**HOME (S6)**  
 (momentary)

This circuit provides one line that normally +5V and goes ground and one that does the opposite. To clear the TV typewriter, three things happen: (1) power is removed from the keyboard, forcing all inputs to the 0 state; (2) a "1" is applied to input A6 via memory diode D4; (3) Flip flop IC3 in the cursor is clamped and held till after the clear is released and system timing indicates a new frame is to begin. If you are in the KEEP position, homing simply resets the cursor and keeps the message intact. If you are in the CHANGE position when you home, the entire message is erased and replaced with spaces or a 100000 code.

**CURSOR ON (S7)**

Moving this switch forward grounds pin 28. This keeps the winding cursor from appearing on the screen.

**ADD-SUBTRACT (S8)**

This controls the cursor and entry direction. In the ADD position, you move forward or down a line. Forward because pins 27 and 30 are shorted to provide a big capacitor and Down because the down clock (P) is connected to pin 29, the line direction pin. In the SUBTRACT position, you move backward or up a line. Backward because only a small capacitor remains between pins 27 and 30 and up since only a brief clock pulse appears when pin 29 is grounded.

**PARTS LIST IMPROVED ASCII ENCODER**

- C1 0.1 -  $\mu$ F disc ceramic Mount *flat*.
- D1 to D4 1N914 or equal silicon computer diode
- IC1 HDO165 encoder (Harris)
- IC2 7402 TTL quad NOR gate
- IC3 MC789AP hex inverter, RTL, **do not substitute**
- IC4, IC5 7400 TTL quad NAND gate
- Q1, Q2 2N5139, silicon pnp
- R1, R2 Varies with keyboard, 1000 ohms for mechanical contacts and +5V supply; 3300 ohms for elastomeric high resistance contacts and +12V supply.
- R3, R4 1000 ohms, 1/4-W carbon resistor
- MISC: PC Board, Solder; No. 24 solderize wire, 20 feet for keyboard wiring, sleeving, No. 24 solid wire jumpers.

**NOTE: The following are available from Southwest Technical Products, 219 West Rhapsody, San Antonio, Texas, 78216**

- Mainframe board: No. TVT-1, \$9.75**
- Timing board: No. TVT-2, \$5.75**
- Cursor board: No. TVT-3, \$5.75**
- Page A or B board No. TVT-4, \$5.75**
- High-quality keyboard, custom remanufactured for TV typewriter use (less-encoder) No. TV-5, \$18.75**

**Mainframe circuitry**

The mainframe is shown in Fig. 3 with its PC and component guides in Fig. 10 and 11.