TEC 101

USER / INSTALLER GUIDE

Select Entry Systems

COVERS FIRMWARE REVISIONS 1.XX

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1.0 INTRODUCTION Tec 101 SERIES

The T101HF50 and T101HF125, are automatic call and entry control systems of 50 and 125 capacity, respectively.

The Tec 101 includes a 2 line display LCD display.

SCREEN MESSAGES:

The Tec 101 message is: "PRESS # TO VIEW DIRECTORY". It can be changed as required.

1.1 STANDARD FEATURES:

- Memory Capacity: 50 or 125 for residents telephone numbers and names in directory.
- Dials out either Touch-Tone™ or rotary - field programable.
- Dials up to 14 digit phone numbers.
- Unit will mute tones in speaker during dialing.
- Unit will not accept Touch-Tone™ signals through the microphone.
- Two line 16 character per line LCD display. Displays one name. Characters 8mm, or approximately 3/8".
- Programmable without opening cabinet, via keypad, optional serial port, or optional modem with Selcom T101.
- Talk time field programmable from 1 - 99 min.
- Postal lock capability included.
- Request to exit input for both entrance control relays.
- Entry code attempts (strike out) programmable from 0 - 9.
- Non-volatile memory.
- Surface or semi-flush mounting.
- Remote Door release through Touch-Tone.
- 2 Door control relays.
- Programmable background "beep" to indicate call placed from telephone entry unit.
- Personal Identification Number (PIN code).
- Manager Password (First three digits of Program Password).
- Battery charging circuitry for optional 12v .7 A/hr battery.

1.2 STANDARD PROGRAMMABLE FEATURES

- 1 - 6 digit directory codes field programmable.
- 0 - 6 digit entry codes Personal Identification Number (PIN) field programmable.
- Resident activated door/gate release via Touch-Tone™ number (1-9), field programmable.
- Voice mail response capability. (Keypad active after unit calls out, programmed from Tec 101).
- Crystal controlled tone detection for short burst 50 MS tone.
- Hide Name Feature. Allows people to dial a code without displaying name on directory.
- Two minute modem lockout time.

Dynamic scrolling, based on number of phone numbers programmed. Scrolls after key is held more than 4 seconds.

1 to 30 Names loaded, scrolls by 2's
30 to 100 Names loaded, scrolls by 5's
100 to 125 Names loaded, scrolls by 10's

1.3 OPTIONS:

- Multiple Tec 101's can share same telephone line, via multiple unit interfaces (OPTKMUI). (Up to 4 Tec 101's can share same phone line using Selcom T101. Up to 9 Tec 101's can share same phone line if not using modem.)
- Local ringer capability.
- Semi-Flush mount.
- Night light kit.
- Handset.
- Standby battery.
- 300 - 1200 Baud modem.

BASIC OPERATION:

The Tec 101 is a microprocessor based device that allows entering from 1 - 6 digits on the front keypad. It then automatically dials the phone number programmed into memory. The Tec 101 provides a relay output for controlling doors, gates, elevators or any device actuated by a contact closure or contact opening. The Tec 101 has a programmable 1 to 99 minute talk-time limit. It provides warning tones near the end of talk time.

To operate the Tec 101, press the "#" key to reach the desired name. If you hold the "#" key down after 1 second it will step automatically to the next name. After 4 more names it will scroll by several names, depending on the number of phone numbers programmed. If you skip past the desired name, press the "*" key to scroll back to the desired name. After locating the name enter the code number on the keypad corresponding to the name on the display. The Tec 101 will automatically dial that number.

Personal Identification Numbers (PINs) are available. Entering a *, then a valid PIN code will energize the main control relay.

The Tec 101 will dial out either pulse (rotary) or Touch-Tone™ via programming selection. While the Tec 101 dials, the speaker disconnects, keeping the dialed phone number confidential.

Calling the Tec 101 from a Touch-Tone™ telephone will allow the user to control the output relays. When the user calls the Tec 101, the Tec 101 will ring, go off hook and send a ¼ second tone. Entering the proper control password will allow access to the output relays.

The (Optional) 12 volt DC .8 A/hr internal battery (B12V) is recommended for line stability. The battery is NOT required for memory storage. SES supplies the Tec 101 with a 16.5 vac transformer that will operate the Tec 101 and recharge the optional internal battery.

DO NOT CONNECT ANY OTHER DEVICES TO THE BATTERY.

1.4 ENVIRONMENTAL CONSIDERATIONS

Indoor or Outdoor: The standard Tec 101 housing is suitable for indoor or outdoor installations. Optional pedestal mounts for curb (PST236), or street (PST242). Adapter plate required.

Dimensions: Tec 101 largest outside dimensions are (approx.) 8½" W X 11¾" H X 3½" D.

1.5 ELECTRICAL REQUIREMENTS

Power: The Tec 101 uses 16.5 volt ac 50/60 Hz. SES supplies a 16.5 vac transformer with each purchase in the U.S. only. The installer may choose to provide their own 12 volt 300-600 ma. DC supply. YOU CAN NOT USE AC TRANSFORMER AND DC SUPPLY AT THE SAME TIME.

Ground: The Tec 101 must be connected to a good earth ground with at least # 16 ga. stranded wire. This wire MUST be a minimum of 16 ga. connected to a ground rod or cold water pipe at one end, and to the provided ¼ -20 bolt at the Tec 101 end. The maximum wire length is 50 feet. Surge damage protection built into Tec 101 diminishes if you do not provide an adequate earth ground.

Relay capabilities: 24 volts AC or DC at 3 amp. Form "A" (N/O) or form "B" (N/C) contacts are selectable for all relays. These are jumper selected (see Pg. 9 to set relay jumpers).

Gate controllers: Some solid-state gate controllers react to the over-voltage protection devices used on all SES products. This is a gate controller dependent problem. The symptom is an intermittent gate open, or gate stuck open condition. If this occurs, add an external relay controlled by the Tec 101 output relay contacts to your gate system (OPTKFRMC) . This will help isolate the contacts going to your solid state gate controller from the over-voltage protection devices.

Pedestal Mounting: For installations where the Tec 101 will be mounted on a pedestal, a ground rod MUST be installed immediately adjacent to the Tec 101. In addition, a ground wire of at least # 16 gauge wire must be used from the ¼-20 ground lug mounted in the back of the Tec 101 back-box to the ground rod clamp. This ground wire is to be no more than 25 feet in length, and should have no sharp bends in the wiring.

1.6 TECHNICAL DATA

• POWER INPUT:	16.5 VAC 20 VA UL LISTED TRANSFORMER (PROVIDED).
• EMERGENCY BATTERY:	12V .8 A/HR GEL CELL ON CONSTANT CHARGE (OPTIONAL).
• TELEPHONE LINE:	VOICE GRADE RJ-11C JACK.
• SHIPPING WEIGHT:	APPROXIMATELY 11 LBS.
• CONSTRUCTION:	FRONT PANEL: 16 GA. GALVANIZED STEEL PAINTED. BACK BOX: 16 GA GALVANIZED STEEL PAINTED.
• OPERATING ENVIRONMENT:	TEMPERATURE: 0º F TO +158º F. (-20º C - 70º C) RELATIVE HUMIDITY: 5% - 95% NON-CONDENSING.
• RELAY OUTPUT:	FORM A OR FORM B DRY CONTACT 24V @ 3 AMP.
• MOUNTING:	SURFACE OR SEMI-FLUSH.
• MEMORY TYPE:	NON-VOLATILE.
• TONE DETECTION:	CRYSTAL CONTROLLED, WILL DETECT SHORT BURST 50 MILLISECOND TONE.

2.0 INSTALLATION INSTRUCTIONS

NOTE THE FOLLOWING BEFORE ATTEMPTING ANY INSTALLATION:

A. Never install telephone wiring during a lightning storm.

B. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

C. Never touch un-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

D. Use caution when installing or modifying telephone lines.
Installation of Tec 101 requires coordination with your telephone company. SES recommends that a Touch-Tone™ line be installed to allow much faster dialing. If a Touch-Tone™ line is not available, the Tec 101 can be reprogrammed to dial out pulse (rotary) signals.

The phone company may require the following information:

The ringer equivalence number.
The FCC registration number.
These numbers are on the label on the inside door of the Tec 101.

The desired location of the telephone jack must be given to the phone company at the time you order the phone line.

2.1 INSTALLATION PROCEDURE

1) The Tec 101 should be mounted approximately 52 inches above finished floor to the center of the Tec 101. For drive up applications, Tec 101 should be mounted approximately 42" - 48" above finished flooring to the center of Tec 101. Hand set units (Optional, Call Factory) should be mounted 40" - 46" above finished floor to help comply with the Americans with Disabilities Act (ADA).

2) To surface mount the Tec 101, mount the back-box using the holes provided.

3) To flush mount the Tec 101, cut a hole the size of the back box (8 ½" wide X 11 ¾" high) in the wall. Mount the Tec 101 in the hole.
LEAVE ½" FROM THE REAR OF THE DOOR TO THE WALL SO THE DOOR WILL OPEN.

4) We recommend an optional weather hood (Call Factory for availability) when mounting Tec 101 in a stand-alone application, to protect it from direct exposure to rain and snow.

5) The Tec 101 MUST BE AT EARTH GROUND POTENTIAL. Connect a #16 stranded or larger wire from the ground lug mounted on the back-box of the Tec 101 (See section 3.1 Connections, on Pg. 8) to a cold water pipe or other suitable ground. This wire should be less than 50 feet in length.

6) Connect the wires for the power connections to TBS-3 and TBS-4, as shown on Pg. 8. Connect the other ends of the wires to the screws on the supplied transformer (16.5 vac 20 va). Plug the transformer into a 110vac outlet.

Recommended power wire gauge is as shown: 18 ga. up to 50 feet.
16 ga. up to 100 feet.

For unusual distances or requirements please consult factory.

7) If you are using the N.O. contacts on the entrance 1 relay, connect the wires from the controlled device to TBS-9 and TBS-10, as shown on Pg. 8. To use the N.C. contacts, change the relay jumpers (as shown on Pg. 9), and connect the wires from the controlled device to TBS-9 and TBS-10. If a Form C connection is required, purchase the Optional Form C relay adapter (OPTKFRMC). Wire entrance 2 relay to TBS-11 and TBS-12 in the same manner.

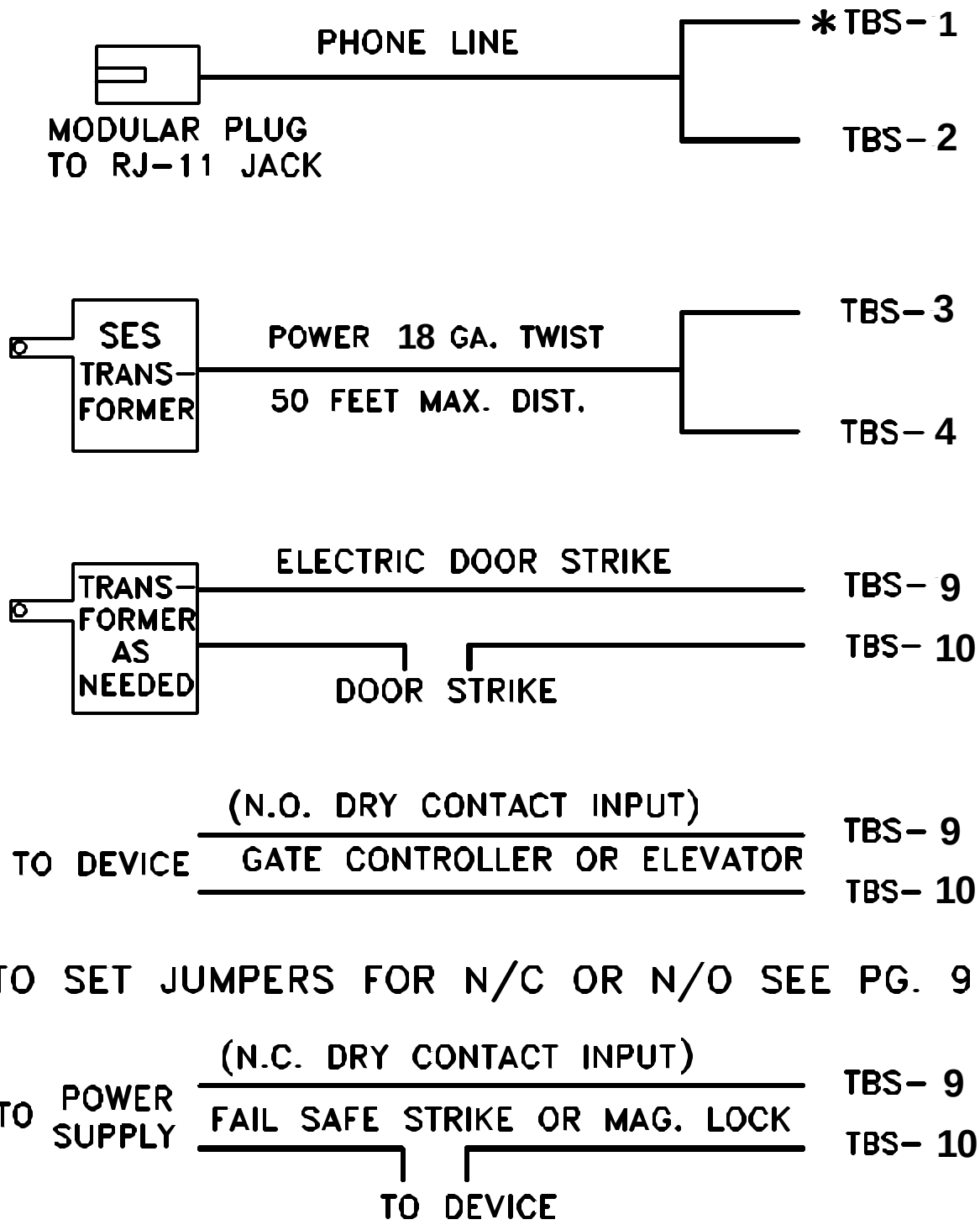
NOTE: THE RELAY CONTACTS ARE RATED FOR 24 VOLTS AC OR DC AT 3 AMPS MAXIMUM.

8) Connect the modular plug for the telephone line to the RJ-11 jack provided by the phone company. No other telephones or equipment should be on this line. If attaching multiple Tec 101's to a single phone line, the optional OPTKMUI (Multiple Unit Interface) may be purchased. For further information, see Section 7 on Pg. 27.

9) All wire openings, or any penetration of the Tec 101 enclosure should be sealed with a good grade of RTV silicon sealant.

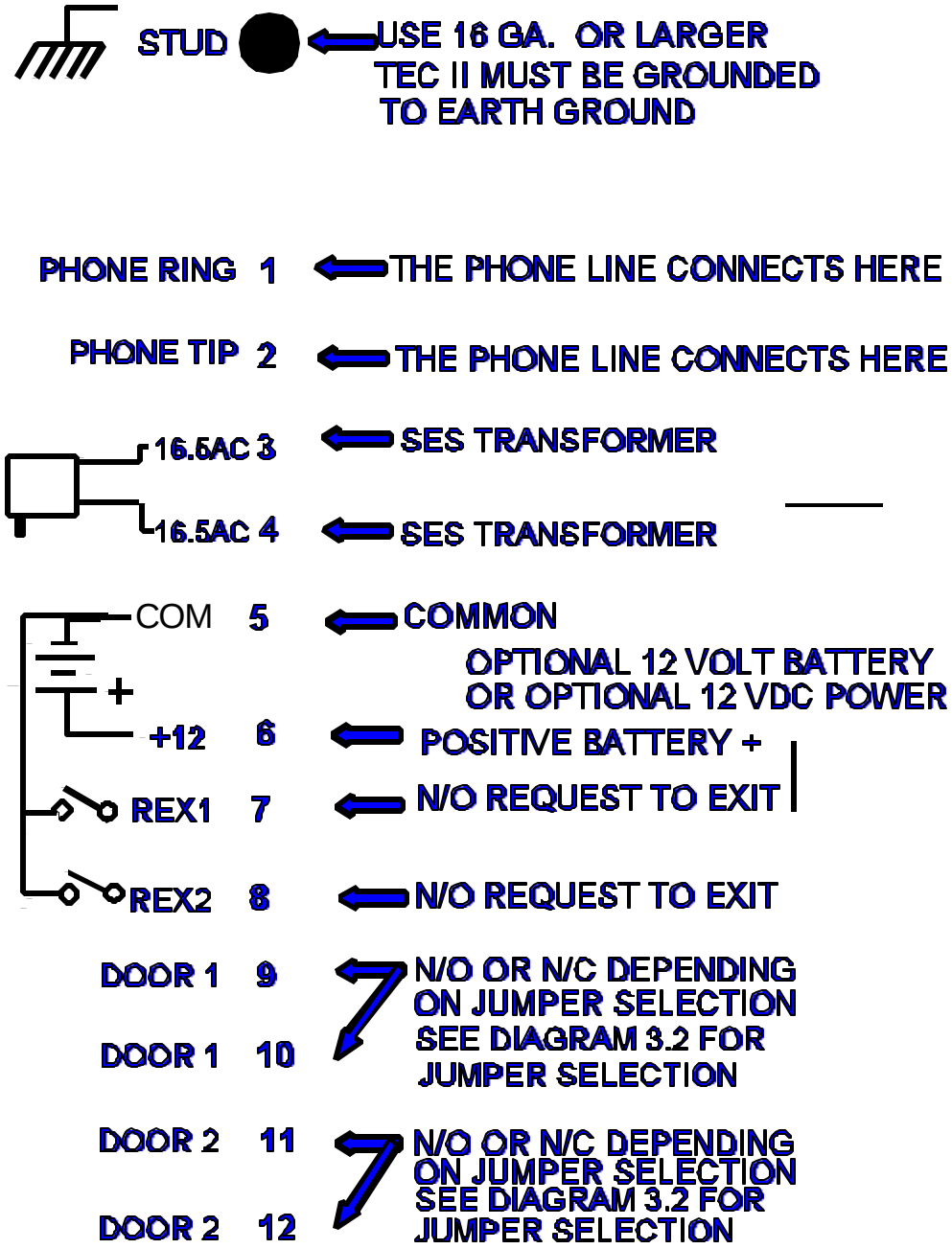
10) This completes the installation.

3.0 WIRING CONNECTIONS



* TBS = TERMINAL BARRIER STRIP ON SIDE OF HOUSING

3.1 TERMINAL BARRIER STRIP CONNECTIONS



3.2 RELAY JUMPER SELECTION

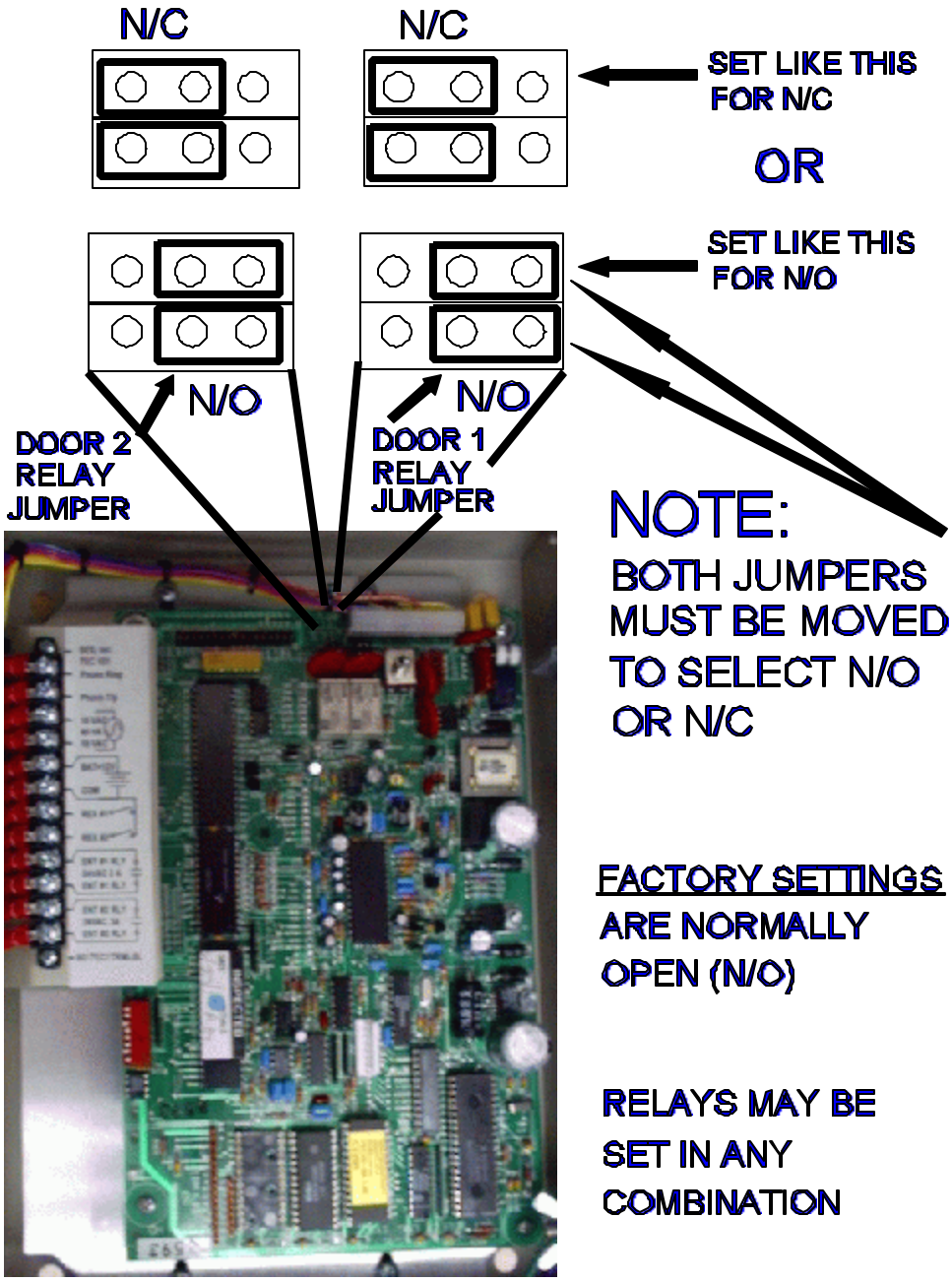


Diagram 3.2

4.0 SETUP AND PROGRAMMING

Setup refers to configuration of a Tec 101, usually during installation. This may include how long the door entry time is, or what number energizes the door control relay. The installer of the Tec 101 generally performs these tasks.

Programming refers to the entry of codes, names, phone numbers, and PINs (Personal Identification Numbers). The end user or customer generally enters the data, and periodically updates it as required.

If the factory defaults shown on Pg. 13 and 14 are adequate for an installation, then the following "Quick Programming" section will give an example of a typical code entry. No explanations about menu selection function will be provided. SES strongly recommends that installers without previous experience in telephone entry control systems read this manual in it's entirety.

4.0.1 QUICK PROGRAMMING EXAMPLE

This example assumes all factory defaults, including factory default passcode 777777 are in the Tec 101 and you have entered no other data. This benefits those with experience installing and programming telephone entry systems.

This example enters the following data into the Tec 101 from the keypad on the Tec 101 front door:

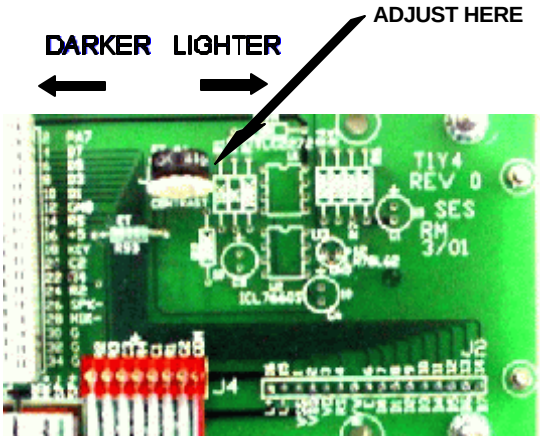
CODE:	NAME:	PHONE:	PIN:
001	SMITH,FRED	555-1234	1234
123	DOE,JOHN	555-9876	5678

1. To begin programming press the "*" and the "0" keys simultaneously.
2. Enter passcode number 777777.
3. Press *.
4. Press 1.
5. Press 1.
6. Press 001*.
7. Press 777#6#444#8#44#1111#333#77#33#3#*5551234*1234*.
8. Press 123 *.
9. Press 3#666#33#1111#5#666#44#66#*5559876*5678*.
10. Press the "*" and the "0" keys simultaneously.

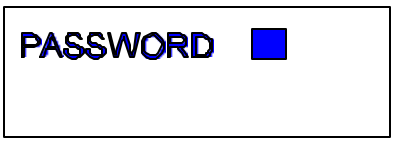
Press the # key twice. You should see both codes and names in the display (one after the other). If you had any problems entering the data, or if you did not understand the reason for a key entry, please read the rest of this manual.

4.1 SETUP

After the Tec 101 first powers on, the message "PRESS # TO VIEW DIRECTORY" will appear in the LCD display. The contrast control on the LCD board may have to be adjusted for best contrast, depending on lighting conditions. This adjustment is on the inside door near the top of the door, above the keypad. See the diagram below.



To begin programming press the "*" and the "0" keys simultaneously



<— This shows on the display window

After you see this in the window, you have six seconds to start to press the six digit pass code. The factory default pass code is 777777. Each time you press a key, a "*" will appear in the window to keep the pass code confidential. After entering the sixth key, press the "*" key. This should bring you to the main menu. If you don't press a key in any 6 second period, the Tec 101 automatically reverts to operational mode. If during programming, you don't press any key for 60 seconds, the Tec 101 automatically reverts to operational mode.
The choices for the main menu are:
1. CODES / NAMES
2. ENT. CONTROL
3. SYSTEM PARAMETERS
4. COMMUNICATIONS SETUP
8. CLEAR DATA
9. DISPLAY DATA

The choices above may have from 1 to 9 additional choices in a particular category. After you make a menu selection, pressing a "*" will return to the main menu. Some menus will have numeric gaps. These are reserved options.

The black box represents the cursor. It shows where to expect the next character. In the remaining examples of this manual, there are text examples where the cursor is assumed. We will not show the keypad for the remaining examples, key inputs will be referred to directly in the text.

The "#" key has different functions when in different sub-menus or different programming modes. Usually, the "#" key will advance the cursor one space to the right. Most functions require the "#" key to shift a character to the right to make a selection or function valid.

The "*" key acts similar to a carriage return key, also called the Enter key on a typewriter or a computer. If you are using a computer to program the Tec 101, press the Enter key (or carriage return) key whenever the text prompts you for a "*"

The "*" and "0" pressed simultaneously act similar to the "ESC" key on a computer. If you are using a computer to program the Tec 101, press the "ESC" key whenever the text prompts you for a "*" and "0".

The "#" and "0" pressed simultaneously act similar to the backspace key on a computer. If you are using a computer to program the Tec 101, press the back arrow (<—) key whenever the text prompts you for a "#" and "0".

4.1.1 MANAGER PASSCODE

The first 3 digits of the 6 digit pass code are for programming main menu choice 1 (CODES/NAMES) only. This is useful for on site maintenance of names and codes. This prevents the system parameters and configuration from being inadvertently modified after installation.

On the following two pages is an overview of the menu selections possible on a Tec 101.

NOTE: ( ) REFERS TO SECTION IN MANUAL DESCRIBING FUNCTION

MAIN MENU	SECTION		FACTORY DEFAULTS
1 = CODES / NAMES	(4.2.1)		
1 = ADD / FIND NAME	(4.2.1.1)	FOLLOW MENU	
2 = FIND NAME	(4.2.1.2)	1 - 6 ALPHA NUMERIC	
3 = FIND PIN	(4.2.1.3)	1 - 6 DIGITS	
5 = CODES USED	(4.2.1.5)	DISPLAYS # USED	
6 = SHOW ALL CODES	(4.2.1.8)	CRT ONLY	
7 = SHOW ALL NAMES	(4.2.1.9)	CRT ONLY	
2 = ENT. CONTROL	(4.2.2)		
1 = ENT 1 CONFIG			
1 = UNLOCK TIME	(4.2.2.1)	1 - 99 SECONDS	10
2 = UNLOCK TONE	(4.2.2.2)	0 - 9 T-TONE RECV'D	6
2 = ENT 2 CONFIG			
1 = UNLOCK TIME	(4.2.2.3)	1 - 99 SECONDS	10
2 = UNLOCK TONE	(4.2.2.4)	0 - 9 T-TONE RECV'D	0
3 = SYS. PARAMETERS	(4.2.3)		
1 = TALK TIME	(4.2.3.1)	1 - 99 MINUTES	01
3 = CODE LENGTH	(4.2.3.3)	1 - 6 DIR LENGTH	3
4 = PIN LENGTH	(4.2.3.4)	0 - 6 PIN LENGTH	4
5 = BACK BEEP	(4.2.3.5)	0-1, (1 = ENABLE)	0
6 = TONE DIAL	(4.2.3.6)	0-1, (1 = T-TONE DIAL)	1
7 = RING COUNT	(4.2.3.7)	0 - 9 RING COUNT	3
8 = STRIKE OUT	(4.2.3.8)	0-1, (1 = ENABLE)	0
9 = TITLE PAGE	(4.2.3.9)		

4 = COMM. SETUP	(4.2.4)		FACTORY DEFAULT
1 = TERMINAL TYPE (not used)	(4.2.4.1)	0 - 1, (1 = VT100A)	1
2 = RS-232 BAUD	(4.2.4.2)	0 - 6, (0=300, 6=19200)	5
3 = PROGRAM PASSWORD	(4.2.4.3)	1 - 6 DIGITS	777777
4 = PIN ON ENT	(4.2.4.4)	1 DIGIT	1
6 = DIR. ON / OFF	(4.2.4.6)	0 - 1, (1 = ON)	1
7 = KEYPAD ON / OFF	(4.2.4.7)	0 - 1, (1 = ON)	0

8 = CLEAR DATA	(4.2.8)
1 = SET PARAMETERS	(4.2.8.1)
6 = CLEAN CODES	(4.2.8.6)

9 = DISPLAY DATA	(4.2.9)
1 = DISPLAY INFO	(4.2.9.1)

4.2.1 CODES / NAMES

CODES/NAMES SELECT 1 - 7

Pressing "1" (after entering the password) will show the choice at left.

A CODE refers to a record in the Tec 101's memory. A record consists of:

CODE#	NAME	PHONE	PIN
123	JONES, TIM	555-1212	1234

A. Code numbers can be from 1 to 6 digits.
B. Names and phone numbers must be entered to display name on directory
C. Phone numbers can be entered without name, but will not display on directory.
D. PIN (Personal Identification Number) codes are associated with code numbers.

4.2.1.1 ADD / FIND NAME

CODE =

Press "1" on the Codes/Names menu. You will be prompted for the code as shown at left:
If you make a mistake while keying in the code number, press the "0" and the "#" simultaneously to move back one space. From a computer, press the back arrow key. Enter the code number. It will be between one and six digits depending on the system parameters (see section 4.2.3). After keying in the desired code number, press the "*".

From a computer, press the "Enter" key.

4.2.1.1 A DELETING A CODE

To delete a code number, key in the code number then press "#" followed by "*". This also will erase all data associated with that code number, such as the name, phone number, PIN, and card number. From a computer, press the "DEL" (delete key) followed by the "Enter" key.

4.2.1.1 B DELETING A CODE FIELD

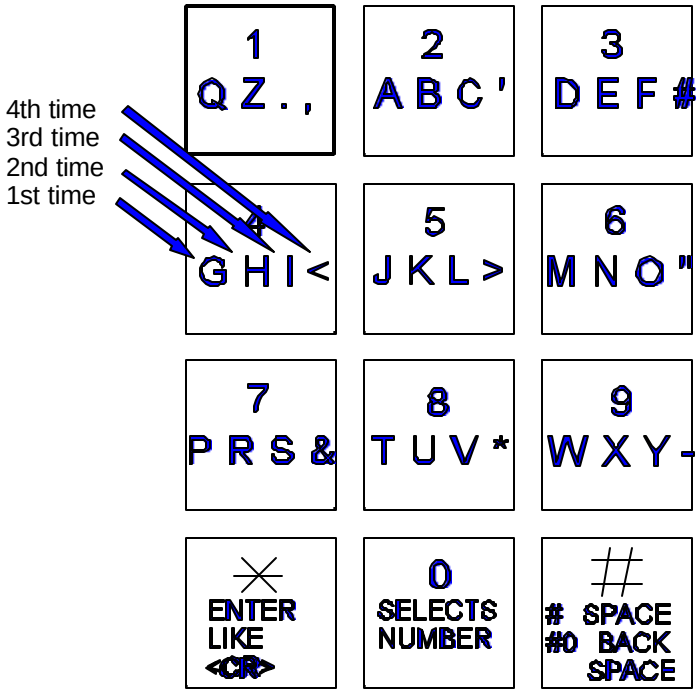
To delete a part of a code number, such as a phone number, PIN # or card #, go to that field by pressing the "*" key. When you reach the desired field, key in "0", then "*" from the keypad. This will delete the data in that field, but not any of the other fields associated with the code number. From a computer, press the "Enter" key until you reach the desired field. Key in "0", and then the "Enter" key.

IF YOU PLACE A "0", IN THE FIRST POSITION OF A NAME FIELD, THEN "#", IT WILL DELETE ALL DATA ASSOCIATED WITH THAT CODE NUMBER.

FOR CHARACTERS:

NAME =

For Tec 101 models, you will be prompted to enter a name. Names are 1 to 14 characters, including punctuation. The keys on the keypad are alphanumeric. Since there are only 12 keys, each key generates it's number, more than one letter, and punctuation.



The first time you press a key, the first character corresponding to that key will appear in the display. To get to the second character, press the same key a second time. To get the third character, press the same key a third time. To skip a space, press the "#" key. To backspace, press the "0" and the "#" simultaneously. A backspace over an existing character will delete that character. If you inadvertently key past the desired character, keep pressing the key until the desired character is in the window. Then press the "#" key to advance to the next space.

FOR NUMBERS:

To select numbers, press the "0" key and then the desired number key.

After completely entering the name, press the "*" key to enter the name into memory.

NOTE: PRESS THE # KEY TO MOVE PAST THE LAST LETTER BEFORE PRESSING *, OR LAST LETTER IS NOT PROGRAMMED.

PHONE # =

You will be prompted for the phone number. Enter the numbers normally. In this mode, letters are not possible. If you mis-key a digit of the phone number, press the "0" and the "#" simultaneously to backspace and correct the digit. After completely entering the phone number, press the "*" key to enter the phone number into memory. To create a 3 second pause, press the "#" key. For phone systems that dial an 8 or a 9 to get an outside line, key in the number then the "#", then the phone number, then "*". From a computer, press the ":" key to generate a 3 second pause.

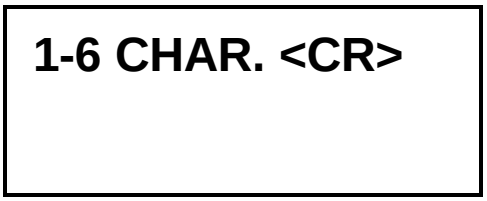
HIDE NAME FEATURE: Place a pause as the first item in the phone number (ex. : 5551212). The name will not display in the directory, but anyone who dials the code number will still be able to reach the resident.

PIN =

You will be prompted to enter a PIN. A PIN is a Personal Identification Number. This will allow anyone who knows this number to enter the facility the Tec 101 controls by entering a "*" and this PIN code. Each name may have a PIN code. The PIN code length is from one to six digits, depending on what you selected from the system parameters menu (see section 4.2.3.4). All PIN codes must be the same length as what was selected from the system parameters menu. When you enter the PIN code, press the "*" key to place the PIN code into memory. If you disable the PIN (PIN length = 0), this choice will not display.

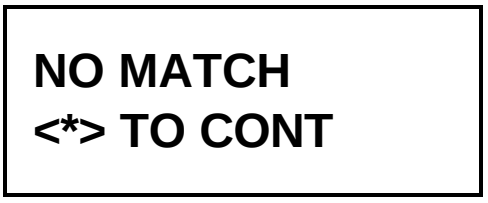
4.2.1.2 FIND NAME

To select the find name function, press "2" from the Codes/Names menu. You will be prompted for 1 - 6 characters. Select characters in the same manner that you programmed names into memory (See the diagram on Pg. 16). When you have entered all desired characters, press "#", then "*"



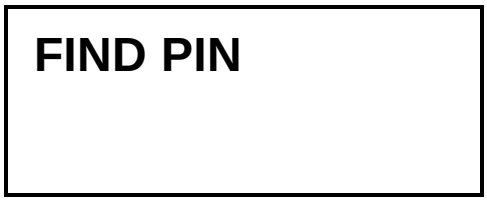
This message will display whatever code number matches the letters selected. If there is more than one name with similar letters, pressing the "*" key will display additional code numbers that meet the selection criteria.

If there is no match, you will be prompted to press either the "*" from the keypad, or Enter key from the computer. A <CR> or "*" will return to sub-menu 1 (See section 4.2.1 Codes / Names).

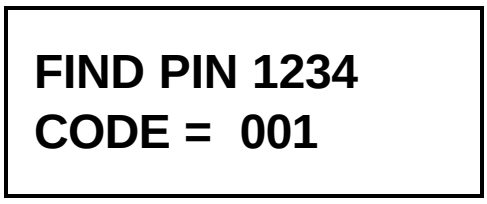


4.2.1.3 FIND PIN

To find a PIN code press "3" from the Codes/Names menu. Next, enter the PIN code, followed by pressing "*".



Assuming you had assigned 1234 to code # 001, the window would look like the one at right. Pressing a "*" will return to the "Find Pin" sub-menu.



If a PIN code # is not in memory, the "Not Found" sub-menu will display as shown. In this example, 234 was entered. Since the PIN codes have been defined as 4 digits, the Tec 101 supplied a leading "0" and displayed the "NOT FOUND" message.

4.2.1.5 CODES USED

The codes used sub-menu is reached by pressing "5" on the Codes/Names menu. The number of codes used and the number of phone numbers used will be displayed as shown at right.

4.2.1.6 SHOW ALL CODES

Select this sub-menu from the Codes/Names menu by pressing "6". This selection will list code numbers and all data associated with code numbers, sorted by CODE NUMBER in ascending order. It sends this data out the optional serial port (OPTKSERIAL) to a computer. If you are using the optional modem with a computer it will send the data to the computer screen.

4.2.1.7 SHOW ALL NAMES

Select this sub-menu from the Codes/Names menu by pressing "7". This selection will list code numbers and all data associated with code numbers, sorted by NAMES in ascending order. It sends this data out the optional serial port (OPTKSERIAL) to a computer. If you are using the optional modem with a computer it will send the data to the computer screen.

4.2.2 ENTRY CONTROL

ENT 1
SEL FUNCT 1 - 3

The Entry Control menu comes with factory defaults that should be sufficient for most installations. These default values are shown on Pg. 13 and 14 (see section 4.2.2). Some functions work with options that may not be present on your Tec 101. To get the menu at left, press "2" and then “1" from the main menu.

4.2.2.1 ENTRANCE 1 UNLOCK TIME

ENT 1
UNLOCK TIME = 10

Press "1" from the Entry Control menu to set the time in seconds from 1 to 99 seconds. This is the length of time the door control relay for door 1 will be energized. The factory default is 10 seconds. A good rule of thumb for entry time is 3 seconds plus 2 seconds for every step from the Tec 101 to the entrance being controlled. To change time, key in the time desired and press the "*" key. You will be returned to the Entry Control menu.

4.2.2.2 ENTRANCE 1 UNLOCK TONE

ENT 1
UNLOCK TONE = 6

The Entrance 1 tone refers to the Touch-Tone™ number from a telephone that must be pressed to energize the door control relay. This relay will be energized for whatever length of time was selected (see section 4.2.2.1; door open time). Rotary or pulse type telephones must dial any number "6" or greater to energize the door control relay. This will energize only the primary door control relay. To change the number from the default setting of 6 to another number, press "2" from the Entrance 1 Control menu. Select the new number (from 1 -9) and press the "*" key. You will be returned to the Entry Control menu.

SELECTING A "0" DISABLES ENTRANCE 1 UNLOCK TONE FEATURE.

Press "*" and "0" simultaneously to escape out of these menus and return the Tec 101 to normal operation, or a "*" to return to the previous menu.

4.2.2.3 ENTRANCE 2 UNLOCK TIME

ENT 2
UNLOCK TIME = 10

Press "2" then “1" from the Entry Control menu to set the time in seconds from 1 to 99 seconds. This is the length of time the door control relay for door 1 will be energized. The factory default is 10 seconds. A good rule of thumb for entry time is 3 seconds plus 2 seconds for every step from the Tec 101 to the entrance being controlled. To change time, key in the time desired and press the "*" key. You will be returned to the Entry Control menu.

Press "*" and "0" simultaneously to escape out of these menus and return the Tec 101 to normal operation, or a "*" to return to the previous menu.

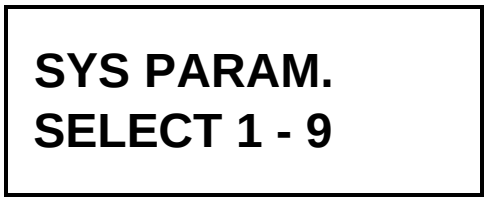
4.2.2.4 ENTRANCE 2 UNLOCK TONE

The Entrance 2 tone refers to the Touch-Tone™ number from a telephone that must be pressed to energize the door control relay. This relay will be energized for whatever length of time was selected (see section 4.2.2.6; door open time). To change the number from the default setting of 0 (disabled) to another number, press "2" from the Entry 2 Control menu. Select the new number (from 1 - 9) and press the "*" key. You will be returned to the Entrance Control menu.
SELECTING A "0" DISABLES ENTRANCE 2 UNLOCK TONE FEATURE.

Press "*" and "0" simultaneously to escape out of these menus and return the Tec 101 to normal operation, or a "*" to return to the previous menu.

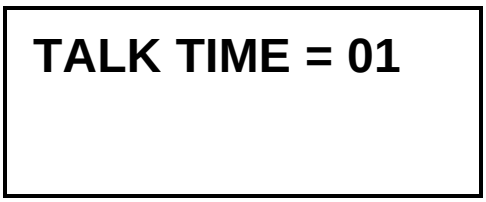
4.2.3 SYSTEM PARAMETERS

The System Parameters menu comes with factory defaults that should be sufficient for most installations. These default values are shown on Pg. 13 and 14 (see section 4.2.3). To get the menu at right, press "3" from the main menu.



4.2.3.1 TALK TIME

Talk Time is the time in minutes from 1 - 99 minutes that the Tec 101 remains connected after dial out. In areas of the country where rate usage is a concern, the factory default is 1 minute. For other applications, the talk time can be adjusted upward by pressing "1" from the System Parameters menu to get this sub-menu. Key in the desired number (must be 2 digits) and press "*". This will return you to the System Parameters menu.

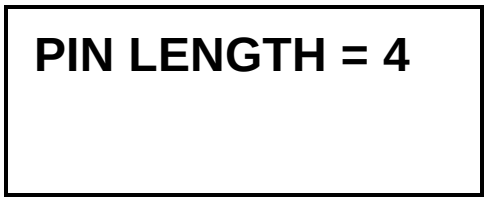


4.2.3.3 CODE LENGTH

Code length is the number of digits from 1 to 6 entered on the keypad to dial a phone from the Tec 101. To change the code length from the factory default of 3 digits, press "3" from the System Parameters menu to get this sub-menu. Key in the desired number from 1 - 6 and press "*". This will return you to the System Parameters menu.

4.2.3.4 PIN LENGTH

PIN length is the number of digits from 0 to 6, entered from the keypad to enter a PIN code from the Tec 101. To change the PIN length from the factory default of 4 digits, press "4" from the System Parameters menu to get this sub-menu. Key in the desired number from 0 - 6.
SELECTING PIN LENGTH = "0" DISABLES THE PIN FUNCTION. Press "*" to return to the System Parameters menu.



4.2.3.5 BACK BEEP

Back Beep is a background tone that will "beep" every 10 seconds when enabled. This allows a called party to determine if someone called from a Tec 101. To enable the back beep from the factory default of 0, press "5" from the System Parameters menu to get this sub-menu. Press "1" to enable Back Beep, and press "*". This will return you to the System Parameters menu.

4.2.3.6 TONE DIAL

TONE DIAL = 1

Tone dial selects whether the Tec 101 dials out with Touch-Tones™, or uses pulses, like rotary dial phones. In areas of the country where Touch-Tone™ is not available, tone dial may be disabled. To disable the Tone Dial from the factory default of 1, press "6" from the System Parameters menu to get this sub-menu. Press "0" to disable Tone Dial, and press "*". This will return you to the System Parameters menu.

4.2.3.7 RING COUNT

RING COUNT = 3

Ring Count is the number of rings the Tec 101 listens to before it answers. This is useful for operating the door control relay without being called, or for Remote Programming. If ring count is 0, the Tec 101 will not answer at all. To change the ring count from the factory default of 3 rings, press "7" from the System Parameters menu to get this sub-menu. Key in the desired number from 0 - 9 and press "*". This will return you to the System Parameters menu.

4.2.3.8 STRIKE OUT

STRIKE OUT = 3

Strike Out refers to the number of incorrect PIN code entries that can be made before the Tec 101 "locks up". Once the Tec 101 "locks up", it ignores any key entries for 60 seconds. This is to discourage attempts to guess PIN codes. Select Strike Out from the Door Control menu by pressing "9". To change from the factory default setting of 3, press any key from 0 - 9 and then press "*".

NOTE: IF 0 IS SELECTED, THE Tec 101 WILL PERMIT UNLIMITED ATTEMPTS TO GUESS PIN CODES.

INVALID PIN
TRY AGAIN

If you enter an invalid PIN code, an error message like the one at right, will display. Wait until the title screen (if selected) appears, or until the error message goes away before re-keying the PIN code.

BUSY PLEASE WAIT

If the number of strike outs is exceeded, an error tone will sound. A message like the one at right, will be shown on the front display of the Tec 101.

ACCESS GRANTED

If you enter a valid PIN code, the door control relay will energize and the open message shown at right, will display on the Tec 101 for approximately 2 seconds and then revert back to the title page.

4.2.3.9 TITLE PAGE

LINE 1

The Title Page has two lines of up to sixteen characters per line, including punctuation. The Title Page can be programmed from the keypad in the same manner as names were programmed (see section 4.2.1.1). See the table below for character assignments.

The Tec 101 comes with a title page that says "PRESS # TO VIEW DIRECTORY", until the title page is reprogrammed. To program the Title Page from the factory default of "PRESS # TO VIEW DIRECTORY", press "9" from the System Parameters menu to get this sub-menu. Key in the desired character and press "#" to advance to the next character space. Press "#" to advance to a blank space. Press "#" and "0" simultaneously to backspace one character. When the first line is complete, press "*" to advance to the second line.

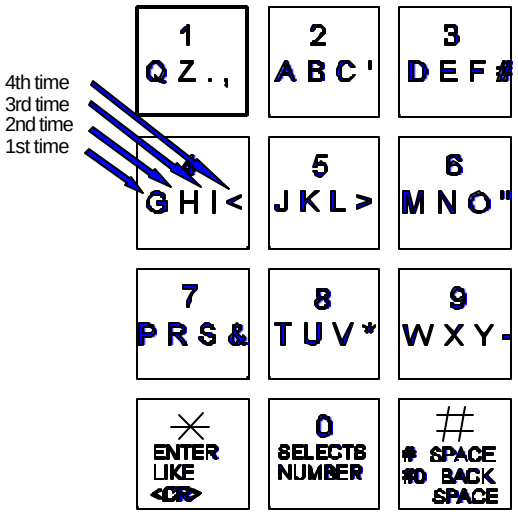
LINE 2

Continue the second line as required. If you require any modifications of line 2, then line 1 must be re-entered first. After completion, press "*". This will return you to the System Parameters menu.

NOTE: REMEMBER TO PRESS "#" KEY AFTER LAST CHARACTER, OR IT WILL NOT BE PROGRAMMED.

The keypad programming table is repeated here as an aid to selecting the proper key strokes to set the title page.

The first time you press a key, the first character corresponding to that key will appear in the display. To get to the second character, press the same key a second time. To get the third character, press the same key a third time. To skip a space, press the "#" key. To backspace, press the "0" and the "#" simultaneously. A backspace over an existing character will delete that character. If you inadvertently key past the desired character, keep pressing the key until the desired character is in the window. Then press the "#" key to advance to the next space.



FOR NUMBERS:

To select numbers, press the "0" key and then the desired number key.

When the title pages are completely entered, press the "*" key to enter the name into memory.

4.2.4 COMMUNICATIONS SETUP

COMM. SETUP
SELECT 1 - 8

The Communications Setup menu comes with factory defaults that should be sufficient for most installations. These default values are shown on Pg. 13 and 14 (see section 4.2.4). Some functions are used with options that may not be present on your Tec 101. For example, selection 2 RS-232 Baud is not valid unless you purchase the optional serial interface (OPTKSERIAL). To get the left menu, press "4" from the main menu.

4.2.4.1 TERMINAL TYPE

TERM. TYPE = 1

This choice not functional on Tec 101.

4.2.4.2 RS-232 SETTINGS

RS-232 BAUD = 5

The RS-232 Baud refers to the rate of speed for serial communications, such as a computer would need. This function requires the optional serial interface (OPTKSERIAL). The different rates are:

0 = 300 BAUD
1 = 600 BAUD
2 = 1200 BAUD
3 = 2400 BAUD
4 = 4800 BAUD
5 = 9600 BAUD
6 = 19200 BAUD

Serial protocol is fixed at 8 bits, No parity, 1 stop bit. (8,N,1)

To change the RS-232 Baud from the factory default of 5, press "2" from the Communications Setup menu to get this sub-menu. Next, select the number corresponding to the desired baud, and press "*". This will return you to the Communications Setup menu.

4.2.4.3 PROGRAM PASSWORD

PASSWORD = 777777

The Password leaves the factory with a default password of 777777. The Password may be alphanumeric (1 - 6 characters) if programmed from an optional computer. From the front keypad, only numbers (1 - 6 digits) are supported. This provides an additional level of security if you connect a computer to a Tec 101. It is possible to create passwords that can not be accessed from the front keypad. To change the Program Password from the factory default of 777777, press "3" from the Communications Setup menu to get this sub-menu. Key in the desired 6 digits for the new password, and press "*". You will be returned to the Communications Setup menu.

4.2.4.4 PIN ON ENTRANCE

PIN ON ENT = 1

This function determines which door control relay is activated when a PIN code (or a Rotary "6" from a called unit) is received by the Tec 101. To change the number from the default setting of 1 to 2, select "4" from the main menu. Select "4" from this sub-menu. Select the new number and press the "Enter " key. You will be returned to the COMM. SETUP menu.

4.2.4.6 DIRECTORY ON / OFF

DIRECTORY ON=1

This selection allows all directory names to be suppressed from the display. The codes keyed in will still display. To disable Directory from the factory default of 1, press "6" from the Communications Setup menu to get this sub-menu. Press "0" to disable Directory, and press "*".

4.2.4.7 KEYPAD ON / OFF

KEYPAD ON = 0

This selection allows the keypad to remain active after dial out. This is useful for ATM machines, voice mail, and other functions requiring a Touch-Tone™ signal after communications are established. To enable keypad from the factory default of 0, press "7" from the Communications Setup menu to get this sub-menu. Press "1" to enable the keypad, and press "*". Only the number keys are active, * and # will not work.

4.2.8 CLEAR DATA

This function allows selective erasing of some data stored in the Tec 101. The choices are to set the parameters back to the factory defaults, and to clean corrupted codes.

Press "*" to return to the Main menu.

CLEAR DATA SELECT 1 - 6

When you select any of these choices 1 or 6, the message at left will display. If you press a "1" by mistake, press "#" and "0" simultaneously to backspace over the "1". Press "0" then "*" to return to the main menu. If you press any key other than "1", the Tec 101 will sound a long error tone. Press "*" again, to return to the Main menu.

DESTROYS REC CONTINUE? 1/0

4.2.8.1 SET PARAMETERS

This returns all Door Control, System Parameters and Communication Setup settings to the SES factory defaults. These defaults are shown on Pg. 13 and 14. Press "1" to reset the parameters.

4.2.8.6 CLEAR CORRUPTED DATA

Pressing "6" causes this selection to clear all corrupted directory data. Press "*" to return to the Main menu.

4.2.9 DISPLAY DATA

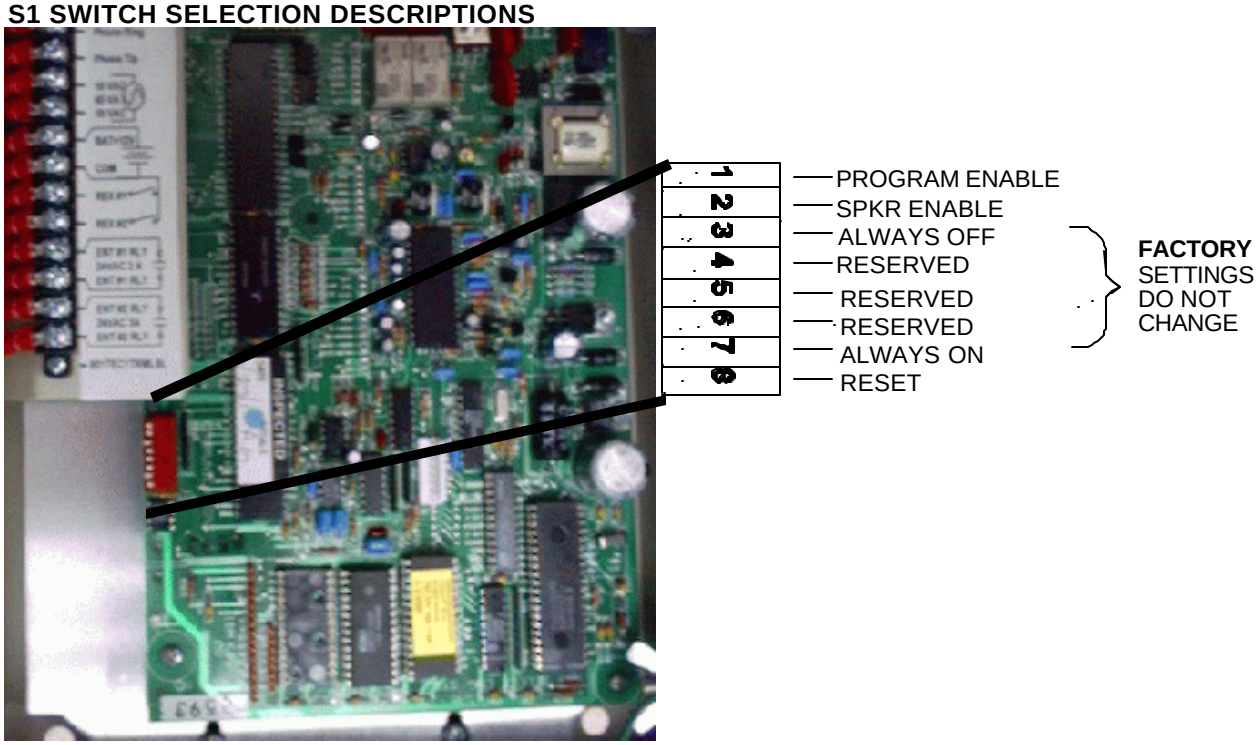
This menu selection is used with an optional serial port (OPTKSERIAL), for a computer, for sub-menu choice 1. Data is sent to the optional serial port. It is used to print various parameters. To select this function, press "9" from the Main Menu. You will see the display, shown below.

4.2.9.1 DISPLAY INFO

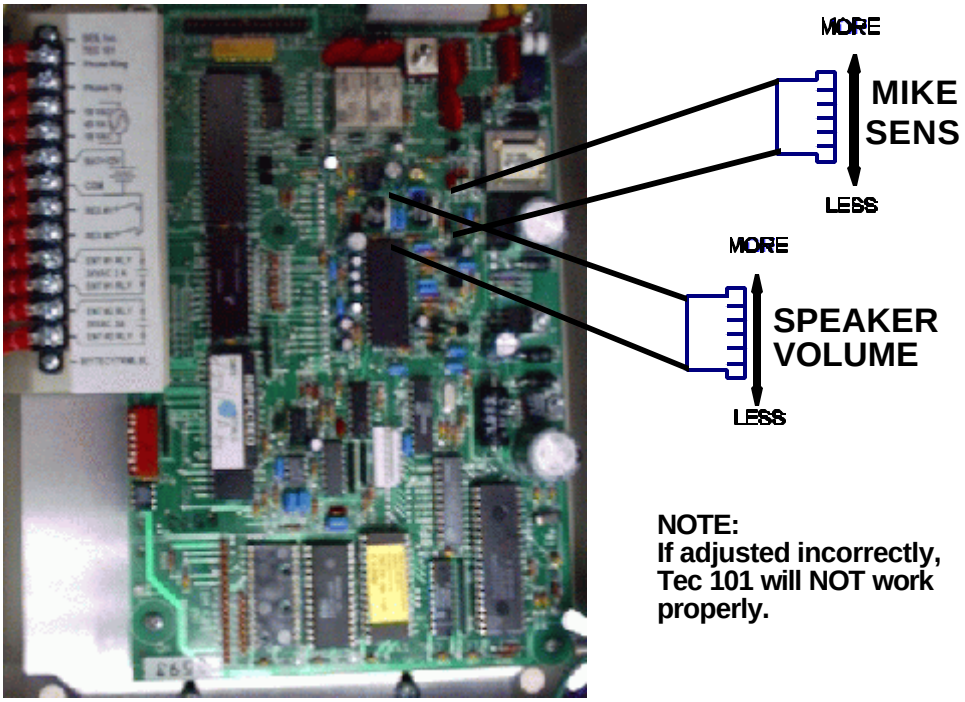
Pressing "1" will send the system configuration information (like the example below) for this Tec 101 to a computer.

```
VER 1.XX
CODE CAP = 0125
PHONE CAP = 0125
CODE LENGTH = 3
PIN LENGTH = 4
PRESS # TO VIEW
  DIRECTORY
PROGRAM PSWD = 777777
```

5.0 S1 SWITCH SELECTION DESCRIPTIONS

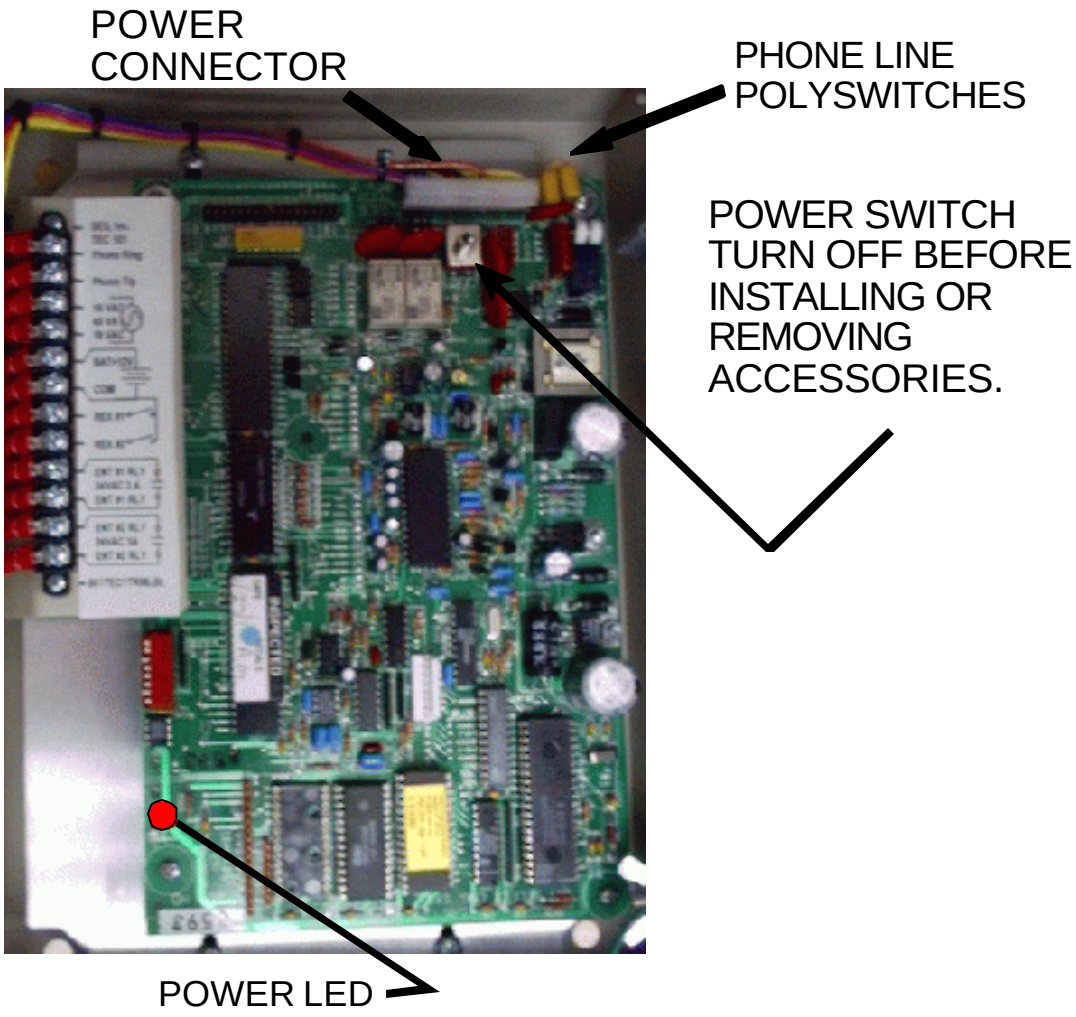


5.1 SPEAKER AND MIKE ADJUSTMENTS

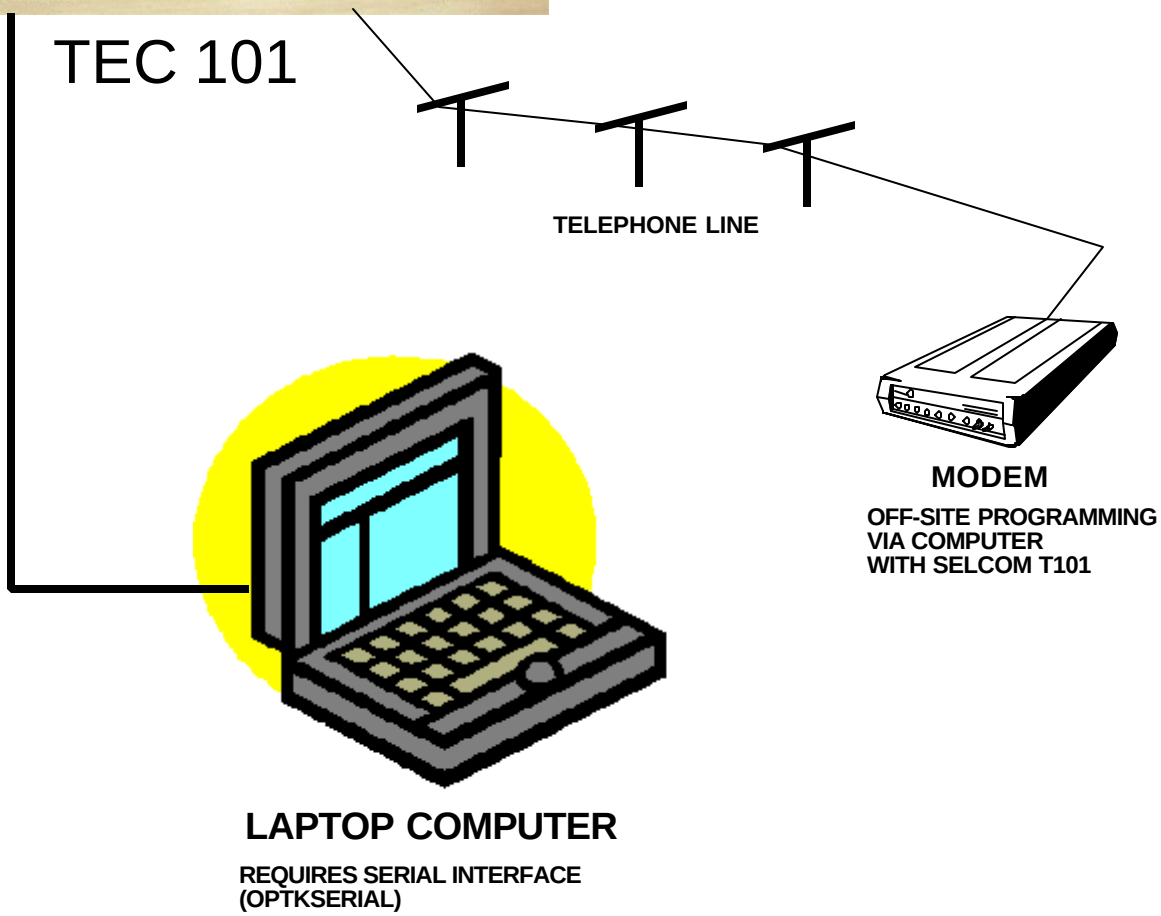


NOTE:
If adjusted incorrectly, Tec 101 will NOT work properly.

5.2 POWER SWITCH LOCATION



6.0 ACCESSORIES OVERVIEW

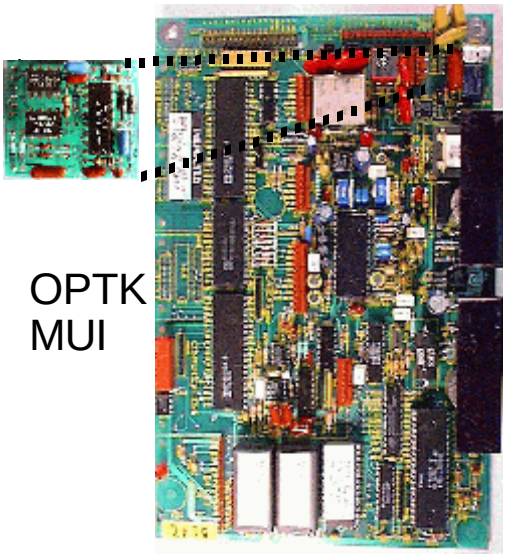


Although some options are not shown, available options are:

- Multiple units can share same telephone line, via MUIs (OPTKMUI).
- Serial capability (RS-232 port) Baud rates to computer 300, 600, 1200, 2400, 4800, 9600, 19200
- Standby battery (OPTB12V).
- 1200 baud modem for programming over phone lines (OPTKMOD).
- Two minute "sleep" function to allow programming up to 4 Tec 101 with modem.

7.0 MUI (MULTIPLE UNIT INTERFACE)
TURN OFF POWER BEFORE INSTALLING

The Multiple Unit Interface (OPTKMUI) is an optional device that allows up to 8 Tec 101's to share a phone line. While it is preferred that each Tec 101 have its' own phone line, it is sometimes necessary to share an existing line for cost effectiveness. Whenever a Tec 101 goes off hook, all other Tec 101 units sharing that same phone line will display a "Phone Line Busy Please Wait" message on the LCD display.



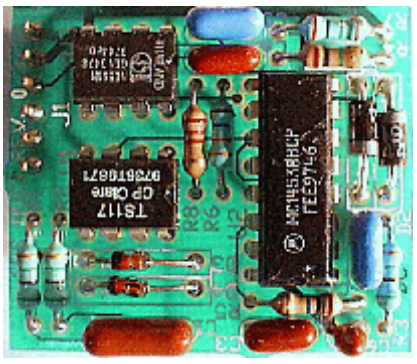
OPTK
MUI

The MUI also is required for installations that use modems but want to share phone lines with other equipment that also makes use of modems. (See section 9).

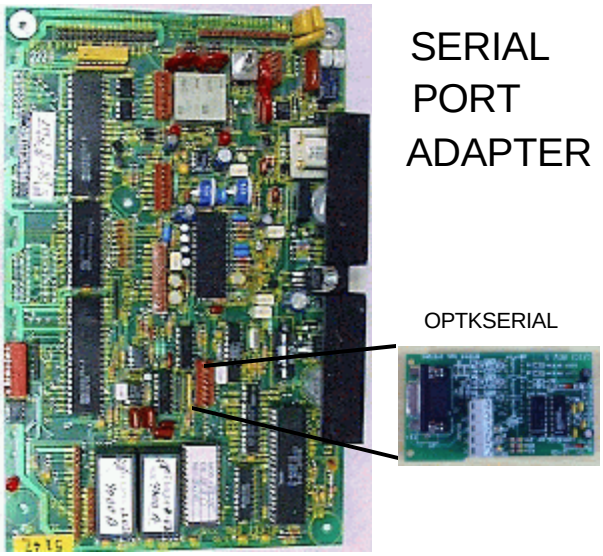
Something to consider when deciding how many phone lines to get for a multiple unit installation, is the number of residences each Tec 101 will call. This will help determine the optimum number of phone lines in balancing cost versus convenience against anticipated telephone usage.

To install a MUI, power down the Tec 101, and plug the module into the header. Note that the Tec 101 power switch will be to the left of the MUI module.

MUI's may be attached to their common phone line by running the phone line pair from Tec 101 to Tec 101, or from some common point to all Tec 101 locations. This provides a lot of installation flexibility.



8.0 SERIAL PORT ADAPTER
TURN OFF POWER BEFORE INSTALLING



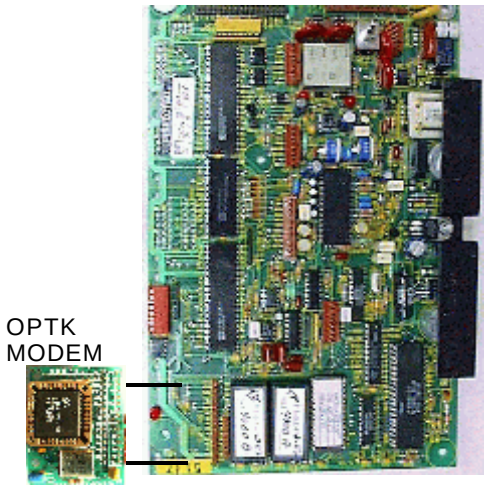
The serial port adapter permits the Tec 101 to be programmed from a laptop computer. The length of the serial cable may be up to 100 feet in length. From a computer, plug a cable from the computer serial port to the 9 Pin D-sub connector on the serial board.

8.1 CONNECTING A COMPUTER TO THE SERIAL PORT

The Tec 101 may be programmed by IBM compatible laptop computers that have the Selcom T101 communications program. Set the communications parameters to 9600 baud, 8 bits, 1 stop bit, No parity, (8,N,1) going from the COMM port on your computer to the serial board on the Tec 101. Check the Tec 101 from the keypad on the front of the Tec 101 to make sure that the Tec 101 communications parameters are also set to 9600 baud.

To start communications run the Selcom T101 program.

9.0 1200 BAUD MODEM
TURN OFF POWER BEFORE INSTALLING

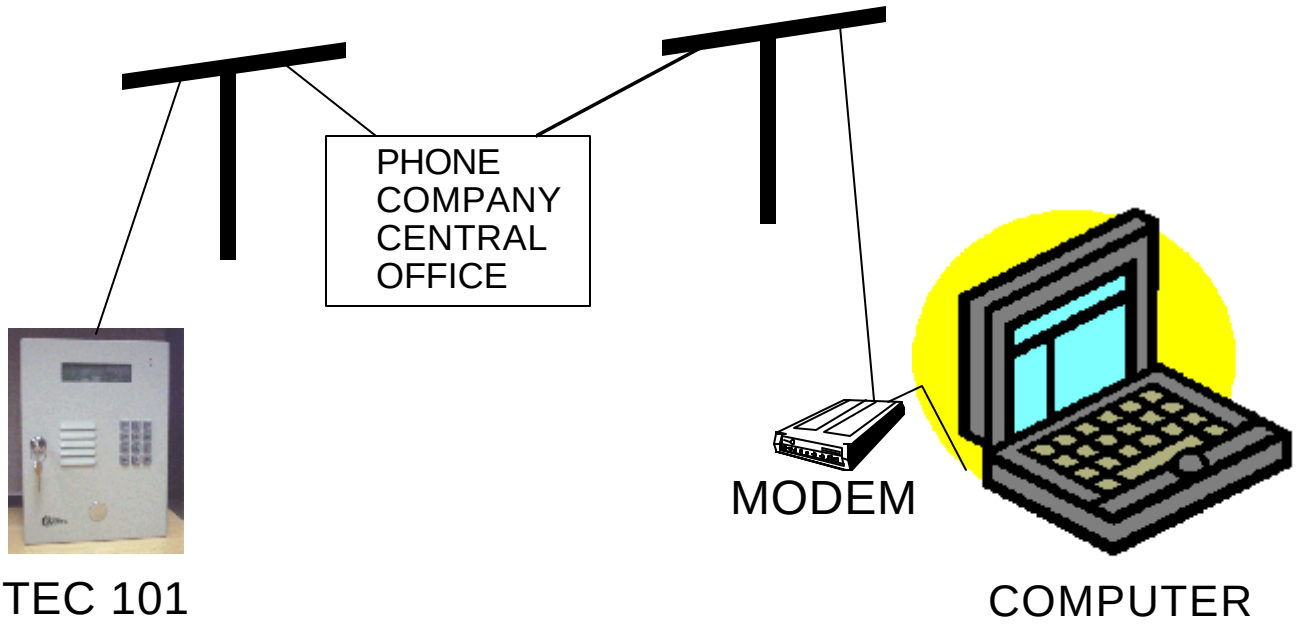


The modem adapter (OPTKMODEM) is generally ordered at the same time as the Tec 101.

To install a modem on the Tec 101 after the Tec 101 has been purchased, toggle the power switch off (or remove the power connector) on the Tec 101. Next, plug in the modem making sure that both connectors are seated correctly and the nylon standoffs are connected to the main PC board. Then, toggle the power switch on (or reconnect the power connector). The modem operates at 300 and 1200 baud. 1200 baud is the preferred operating speed, but for noisy phone line or difficult communications, 300 baud may be used.

The communications protocols for the modem are: 1200 baud, 8 bits, 1 stop bit, No parity (8,N,1). This modem conforms to Bell 103 and Bell 212A requirements for 300 and 1200 baud.

9.1 MODEM COMMUNICATIONS

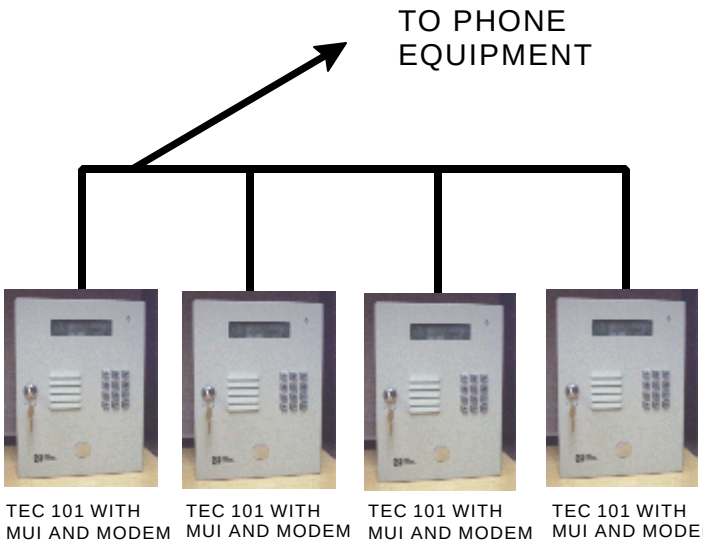


The Tec 101 modem functions like any other modem. For computers equipped with Windows 95 or later, the optional Selcom T101 program may be used to control the Tec 101 series unit. This program has many features, including automatic upload (sending information to the Tec 101 unit) and automatic download (getting information from the Tec 101 series unit).

9.2 TWO-MINUTE LOCKOUT

The Tec 101 modem normally disconnects from the phone line when it receives an escape signal after programming has been started. For multiple Tec 101 installations, that share phone lines (using MUI's) it is necessary to temporarily disable the Tec 101. This is because modems can not currently share the same phone line (Their signals would interfere with each other). This is handled automatically in Selcom T101 software. In the example at left, 4 Tec 101's are sharing a single phone line. The one at the extreme left has had it's ring count set to 2. The next one is set to ring count 4. The 3rd one is set to ring count 6, and the last one is set to ring count 8. This is the number of rings the Tec 101 will listen to before it answers. Users of Selcom T101 can automate this procedure. Check the Selcom T101 instructions.

Section 7.0 on the MUI shows that up to 8 Tec 101s may be connected to a phone line. If Tec 101s are equipped with modems, a maximum of 4 Tec 101s can be connected to the same phone line. Noise "glitches" on the phone line might be erroneously interpreted as a ring signal by the Tec 101. This might cause 2 Tec 101s to answer at the same time, which would prevent the modems from operating correctly. This is also why it is important to have at least 2 rings difference on the Tec 101 ring count.



I. FCC REQUIREMENTS

1. The Federal Communications Commission (FCC) has established Rules which permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin lines.

2. If this unit is malfunctioning, it may also be causing harm to the telephone network. This device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.

3. The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.

4. If the telephone company requests information on what equipment is connected to their lines, inform them of:

   a. The telephone number this unit is connected to
   b. The ringer equivalence number
   c. The USOC jack required
   d. The FCC Registration number

   Items `b' and `d' are indicated on the label.

   The ringer equivalence (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

II. SERVICE REQUIREMENTS

1. In the event of equipment malfunction, all repairs should be performed by our Company or an authorized agent. It is the responsibility of users requiring service to report the need for service to our Company or to one of our authorized agents. Service can be obtained at:

   _____

   _____

   _____

   Phone:_____

Warning: Changes or modifications not expressly approved by the party responsible for compliance coul void the user's authority to operate the equipment.

NOTE: This Equipment has been tested and found to comply with the limits for a Class A digital devic. T is pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection agai harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipmer a residential area is likely to cause harmful interference. If this is the case, the user will be required to correct the interference at his own expense.

NOTICE: The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Load Number (LN) is assigned to each terminal device. This denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices. This is subject only to the requirement that the total Load Numbers of all the devices does not exceed 100.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus. This is set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la Class A pescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

“BETTER TECHNOLOGY MAKES BETTER SYSTEMS”

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