Illu. MIRCOM

TC-SERIES

TELEPHONE ENTRY CONTROL SYSTEM

INSTALLATION AND OPERATING INSTRUCTION

MIRCOM TELEPHONE ENTRY SYSTEM

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INTRODUCTION

Mircom's new microcomputer controlled telephone entry system provides hands-free communication with building tenants and in turn will respond to signals from their suite telephones to unlock a door or another access control device.The system utilizes state of the art EEPROM memory so that programmed information is retained even in the event of a complete power failure.

Installation is neat and simple featuring low voltage operation and complete system programmability using the front panel keypad. Additional features of the Mircom system are outlined below.

- Front panel programming featuring the use of user reprogrammable MASTER code to allow entry of tenant security codes and telephone numbers.

- 6 models featuring capabilities of 30, 60, 120, 240, 360 and 540 suites.

- Pulse or DTMF (Touch-Tone) dialling capabilities and use with pulse or DTMF type telephones.

- 1 reprogrammable KEYLESS ENTRY code for every tenant plus 5 spare for use by building management.

- Built-in multiple entrance capability.

- Connection for "Post-Office Lock" door activation.

- Connection for "Lock-Back" door contact to lock door as soon as it is opened to prevent " tail-gating" through entry door.

- Programmable "Door Open" timer (0 - 99 sec.).

- Programmable "On Line" timer (0 - 99 sec.).

- "Hang-up" feature; When tenant hangs up phone, telephone entry system will automatically reset. This will prevent system from staying on-line for duration of on-line timer. Tenant can also hang up using the number "4" key on DTMF "Touch Tone" type phones only.

- Tenant will dial digit #9 from their telephone to release the door strike.

- Available in 4 digit 7-segment LED display or 32-character LCD display versions.

- Tenant codes can be entered in 1, 2, 3 or 4 digit formats.

PRE - INSTALLATION

SITE SELECTION

The entry system should be installed as near as possible to the controlled entry point. Since the system utilizes delicate electronic components, it should not be installed in environmentally hostile locations. A sheltered area where ambient temperatures do not exceed 40°C (104°F) or fall below 0°C (32°F) is required for proper operation.

The keypad panel should not be located in direct sunlight as the visibility of the display will be degraded. If installed in a noisy environment, Mircom can supply the keypad panel with an optional handset to improve communication quality.

POWER REQUIREMENTS

Normally two C.S.A. approved Class 2 transformers are used to operate the control unit and door release. One Mircom type PS-3B 16VAC transformer must be connected to operate the control electronics. This transformer must not be connected to operate any other devices. A second transformer is required to operate the door release and must be compatible with the door release. Example, another PS-3B transformer, tapped at 8VAC, may be used with Mircom's Model # M-10 door strike release. The maximum rating of the door release is 28 volts, AC or DC with a max. current draw of 1.5 AMP.

TELEPHONE LINE

Arrangements must be made with the telephone company for the installation of a dedicated touch-tone or pulse telephone line. Ideally, its jack should be installed inside the unit enclosure. Provide the phone company with D.O.C. approval number for the control unit (**1156 4516 A**) when ordering the phone line. (MIRCOM recommends a DTMF line be ordered, however, a pulse line is acceptable and the control unit can be software adapted for rotary pulse. The tenant phones have no bearing on the line selected for the control).

PLEASE NOTE: THE SUITE TELEPHONES MUST BE CAPABLE OF GENERATING A " DTMF " OR ROTARY PULSE SIGNAL FOR THE DIGIT "9" WHEN ON LINE FOR THE DOOR RELEASE TO OPERATE.

INSTALLATION

The control unit should be installed inside the entry control panel which should already be mounted to the wall near the controlled entry point. Refer to the wiring diagram, and follow the method outlined below.

1. Mount the control unit to the rear of the entry control panel, and make connections as shown on the wiring diagram.

2. Connect the flat ribbon cable (J1) from the keypad panel to the keypad socket connector on the control unit. The socket is keyed so that it can only be installed one way. Do not force it in place. For the LCD version, two ribbon cables are required for operation (J1 and J2).

3. Connect BLACK wire and SHIELD from keypad cable to terminal M2 on control unit. Connect RED wire to terminal M1. Connect WHITE wire to terminal S2. Connect GREEN wire to terminal S1.

4. Carefully connect the 16 VAC transformer (PS-3B) wires to terminals T2 & T1 of the control unit. If power is now applied, operation can be verified by observing the moving " - " prompt on the LED display version, or by observing the "< < <**Mircom**> > >, **Dial Tenant Code**" message on the LCD version. (Make sure you use the 16VAC terminals of the transformer).

5. Connect wires from door strike to terminals L1 (+) and L2 (-) for DC (silent) operation, or to

terminals L3 and L4 for AC (buzzing) operation as appropriate.
(SEE IMPORTANT NOTE REGARDING DOOR STRIKE ON WIRING DIAGRAM.)

6. Connect output of door release transformer to terminals T3 and T4
(SEE IMPORTANT NOTE REGARDING DOOR STRIKE TRANSFORMER ON WIRING DIAGRAM.)

7. Connect the optional "postal lock" (PO) and "lock back" (LB) contacts as per the wiring diagram,

8. Finally connect the telephone line from the jack on the control unit to the jack installed by the Telephone company using the supplied cable.

9. The unit is factory set to operate on a touch-tone type line and for single entrance operation. If a pulse line has been installed or if this control is part of a dual entrance system (two controls sharing one phone line), the appropriate changes must be made while programming.
(See the appropriate sections in the programming description).

SPECIAL FEATURES

POSTAL LOCK

A normally open postal lock contact (connected across terminals "PO" and "B"), when closed momentarily by a post office employee, will instantly operate the door strike to allow access for mail delivery.

The postal lock housing is normally supplied by MIRCOM on one of the enclosure panels, however, the lock itself is supplied by post office authorities.

LOCK-BACK

A contact, designed to close only when the main access door is opened (such as a security system magnetic contact) and wired across terminals "LB" and "B" will enable the lock-back feature.

Example: The door strike is released by a tenant and the visitor enters. Normally, the door strike will remain released for the length of time programmed in the system (See "Door Timer Select" in programming section). With lock-back, however, as soon as the door is opened by the visitor, the lock back feature is tripped--latching the door strike so the door becomes locked the instant it closes. This prevents the door strike from being released longer than it has to and also prevents unauthorized entry of individuals who follow behind the visitor.

HANG-UP

A call on the system is normally "on-line" for 60 seconds (depending on what is set during programming, see "On-Line Timer Select"). However, if access to a visitor is denied, the tenant may simply hang up the phone causing the system to reset, before the "on-line" time expires.

MULTIPLE ENTRANCE

Two access systems at two separate locations with only one phone line are possible. The telephone company need only supply another jack at the second location. In addition, terminals "D" and "M2" of the two control units must be connected together. Each location must be wired with their own transformers, door strikes, etc. as per the wiring diagram. When programming each control unit, you must identify each unit as part of a multi entrance system (See "Multiple Entrance Select" in programming section). While one system is in operation, the word **"BUSY"** (LED version) or "SYSTEM IS IN USE , -PLEASE WAIT-" (LCD version), will appear at the other system.

PULSE OR DTMF DIALLING

This must be set in software (factory default is DTMF) to match the phone line installed. (See "Pulse or DTMF Dialling Select" in programming section).

11 DIGIT TELEPHONE NUMBER

The system has the ability to store one 11 digit telephone number and its corresponding access code (such as a standard long distance number or 800 number). This can be useful if technical service, head office contact, etc. is desired from the control unit. Keep in mind that a long distance call will be charged to the system phone line when the code is used. (See "11 digit telephone number entry" in programming section).

PROGRAMMING

Before programming can begin a record of the building occupants' names, telephone numbers and assigned dialling codes must be established. The "Entry Code Assignment Sheet" on page 14 may be used for this purpose. Remove this page and make multiple copies if necessary.

This sheet is then used to enter the program information and will serve as a reference in the event that changes will be made. The building manager or superintendent should retain this list after programming. (The "CODE Number" is what the visitor actually enters to call the tenant, leading zero's can be omitted).

For example:

OCCUPANT	SUITE	CODE	TELEPHONE
ITO D.	101	0101	555-2299
BRENT J.	102	0102	555-6532
WELLS N.	512	2715	555-1300
WILSON T.	1230	1870	555-1733
EVANS P.	2002	5252	555-5380
etc.			

ENTERING PROGRAMMING MODE

Enter the **MASTER CODE** (Factory default is *999) to enable PROGRAMMING MODE.

With the LED version, the programming prompt " U " will be displayed for approximately two seconds. After the prompt disappears, programming of the features can commence.

With the LCD version, the message "PROGRAM MODE , PLEASE WAIT" will appear followed by the message "ENTER CODE OR , *888 FOR HELP". The feature program code can be directly entered at this time using the appropriate code.

"NO MANUAL" PROGRAMMING USING *888

*888 can be pressed to display a help menu which can be scrolled up or down using the "1" and "3" keys of the keypad. As this help menu is scrolled, the displayed feature can be accessed directly using the " # " key.

TENANT CODE AND TELEPHONE NUMBER ENTRY

Entering *101 when in the programming mode will allow entry of tenant codes and telephone numbers.

With the LED version, at the prompt " U ", enter 11 digits: first the four-digit tenant code followed by the seven-digit telephone number. Then press the " # " key to store the number. Continue in this fashion until all numbers are stored. If the system encounters a duplicate entry, the number will not be stored. Re-enter a new code at this time.

Exit this mode by pressing the " * " button.

Entering code *000 at this time will allow you to exit the programming mode completely.

With the LCD version, programming will be the same except that you will be prompted by the message "CODE TELEPHONE , _____ ___-____" followed by the message "END OF LIST , ***********" when all the storage memory has been used.

NOTE:
If a mistake is made while making an entry, prior to storing it with the " # " key, entering the " * " key will erase the entry and allow it to be reentered correctly.

NOTE:
Use only numerical digits for the tenant code. Do not attempt to use " # " or " * " as part of the actual tenant code.

REVIEW AND DELETE TENANT CODES

Entering *202 when in programming mode will allow the review and deletion of tenant codes.

With the LED version, at the prompt " U ", enter the four digit tenant code to be reviewed, then press the " 3 " key to move forward and display the telephone number associated with the code. Use the " 1 " key to move back to the four digit tenant code. All codes in sequence can be displayed by using the 1 and 3 keys to scroll through the memory. To delete a code, press the " # " key while the four digit tenant code is being displayed.

Exit this mode by pressing the " * " button.

Enter code *000 to exit the programming mode at this time.

With the LCD version, editing of the tenant codes will be the same except that you will be prompted by the message "CODE TO REVIEW , ____" which will prompt you for a tenant code, followed by the message "CODE TELEPHONE , ____ ___-____" which displays the stored code and telephone number.

ENTER KEYLESS ENTRY CODES

Keyless entry codes allow authorized personnel to enter a code directly at the keypad to release the door without the necessity of calling a tenant. For obvious reasons, keyless entry codes should be kept well guarded and should be changed when personnel cease employment, etc.

Keyless entry codes are four digits in length. Entering *303 when in the programming mode will allow the entry of keyless entry codes.

With the LED version, at the prompt " U " , Enter the 4 digit entry code followed by the " # " key. Continue in this fashion until all codes are entered.

Exit this mode by pressing the " * " key.

Exit program mode by entering code *000.

With the LCD version, entering of keyless entry codes will be the same except that the message "KEYLESS ENTRY , CODE #____ " will appear prompting you for the entry of codes.

NOTE:
When actually using Keyless Entry Codes, the " # " key must be pressed before the four digit code.

REVIEW AND DELETE KEYLESS ENTRY CODES

Entering *404 when in programming mode will allow the review and deletion of keyless entry codes.

With the LED version the prompt " U " will appear. Enter the four digit "KEYLESS ENTRY" code to be reviewed making sure to precede the entry with the " # " key. Press the " # " key again to delete the number. The list of entries can be reviewed by using the 1 and 3 keys as described previously in the "review and delete tenant codes" procedure.

Exit this mode by pressing the " * " key.

Exit program mode by entering *000.

With the LCD version, review and deletion of keyless entry codes will be the same except that you will be prompted by the message "KEYLESS ENTRY , CODE #____ ".

REPROGRAM MASTER CODE

As described at the beginning, the MASTER CODE is factory set at *999. Since this code is used to access all levels of programming, it would be a good idea to change the code to one which will be known only by the installer or authorized personnel.

Entering *505 when in programming mode will allow the reprogramming of the master code.

With the LED version, the prompt " U " will appear. Enter the NEW three digit Master Code and press

the " # " key to store it. Do not use the "*" or "#" keys as part of the master code. The new master code will now overwrite the old one and this new code must now be used to enter the programming mode. DO NOT FORGET THIS NEW CODE. Please enter the new master code in the space provided on the next page for reference.

Exit this mode by pressing the " * " key.

Exit programming mode by entering *000.

With the LCD version, reprogramming of the master code will be the same except that you will be prompted by the message "MASTER CODE , *___ ".

NEW MASTER CODE: _____   DATE:_____

PULSE OR DTMF DIAL SELECT

Entering *606 when in the programming mode will allow the selection of pulse or DTMF dialling from the control unit.
(Factory default is DTMF).

With the LED version, the prompt " U " will appear. Enter 00 to select pulse or 11 to select DTMF (tone) dialling and press " # " to store. The prompt " U " will re-appear.

Press " * " to exit this mode.

Enter *000 to exit program mode.

With the LCD version, pulse or tone selection will be the same except that you will be prompted by the message "PULSE OR TONE , P=00 T=11 __ ".

DOOR TIMER SELECT

Entering *707 when in programming mode will allow the selection of the door open time.
(Factory default is 10 seconds).

With the LED version, the prompt " U " will appear. Enter a two digit time in seconds from 00 to 99 and press " # " to store. The prompt " U " will appear.

Press " * " to exit this mode.

Enter *000 to exit program mode.

With the LCD version programming will be the same except that you will be prompted by the message "DOOR OPEN TIME , 00 TO 99 SEC. __ ".

ON-LINE TIMER SELECT

Entering *808 when in programming mode will allow the selection of on-line time.

(Factory default is 60 Seconds).

With the LED version, the prompt " U " will appear. Enter a two digit time in seconds from 00 to 99 and press " # " to store. The prompt " U " will appear.

Press " * " to exit this mode.

Enter *000 to exit program mode.

With the LCD version, programming will be the same except that you will be prompted by the message "ON LINE TIME , 00 TO 99 SEC. __".

MULTIPLE ENTRANCE SELECT

Entering *909 when in programming mode will allow the selection of multiple entrances.
(Factory default is SINGLE entrance).

With the LED version, the prompt " U " will appear. Enter 00 to select dual or 11 to select single entrance and press " # " to store. The prompt " U " will appear.
Press " * " to exit this mode.

Enter *000 to exit program mode.

With the LCD version, programming will be the same except that you will be prompted by the message "DUAL OR SINGLE , D=00 S=11 __ ".

11 DIGIT TELEPHONE NUMBER ENTRY

Entering *111 when in programming mode will allow the programming of the 11 digit telephone number.

With the LED version, the prompt " U " will appear. Enter 15 digits; first the four-digit code followed by the eleven-digit telephone number. Then press the " # " key to store the number. If the system encounters a duplicate entry, the number will not be stored by using the " # " key. Re-enter a new code at this time.

Exit this mode by pressing the " * " button.

To erase, enter the same programming mode by pressing *111. After the prompt " U " appears, enter the same code only. Do not enter the phone number.

Press the " # " and the phone number will be erased.

To exit programming mode entirely, enter *000.

With the LCD version, programming of the 11 digit code is the same except that you will be prompted by the message " CODE ____ , _-___-___-____".

ADJUSTMENTS

Although control units come pre-set from the factory, varying field conditions may require that some adjustments be made at the installed location. Refer to the wiring diagram for control locations.

1. Speaker Volume - This adjustment will vary the listening level at the entry panel. It is located on the control unit. Turn it clockwise to increase volume.

2. Microphone Volume - This adjustment will vary the listening level in the occupant's suite. Turn clockwise to increase volume.

3. Pulse Sensitivity Adjust - Because of the condition of many of the older rotary (pulse) type telephones in use, there is great variation with the signal they generate to release the door. The control units come factory pre-set to respond properly with these variations. If trouble is encountered in releasing the door when using a rotary phone, this control may require adjustments as outlined below.

    a) To increase sensitivity, turn the shaft of the control counter clockwise 1/10 of a revolution, then call the occupant whose phone was previously not energizing the door release. Ask the party to dial the digit " 9 " and observe if the door release has been energized. Continue rotating the control 1/10 of a revolution at a time until the door release is positively energized.

    b) The control units utilize a crystal controlled electronic bandpass filter for the detection of the digit " 9 " from " Touch-Tone " type phones. For this reason no adjustments are required for tone type detection. As long as the tenant telephone can generate a " Touch-Tone " signal when on-line, the control unit will activate the door release.

IMPORTANT NOTICE

The following information is provided to the installation contractor for compliance with Canadian Department of Communications standards.

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 that the equipment will operate to the users satisfaction.

Before installing this equipment, users should ensure that it is permissable to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. 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) assigned to each terminal device 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 subject only to the requirement that the sum of the Load Numbers of all the devices does not exceed 100.

LIST OF PROGRAMMING CODES

*000	Exit programming mode
*101	Enter tenant codes
*202	Review tenant codes
*303	Enter keyless codes
*404	Review keyless codes
*505	Change master code
*606	Select pulse or DTMF
*707	Select door open time
*808	Select on-line time
*909	Select dual entrance
*111	Enter long distance #

WARRANTY

MIRCOM Technologies Ltd., manufactured equipment is guaranteed to be free of defects in material and workmanship for a period of one (1) year from the date of original shipment. MIRCOM will repair or replace, at its option, any equipment which it determines to contain defective material or workmanship. Said equipment must be shipped to MIRCOM prepaid. Return freight will be prepaid by MIRCOM. We shall not be responsible to repair or replace equipment which has been repaired by others, abused, improperly installed, altered or otherwise misused or damaged in any way. Unless previously contracted by MIRCOM, MIRCOM will assume no responsibility for determining the defective or operative status at the point of installation, and will accept no liability beyond the repair or replacement of the product at our factory or authorised service depot.
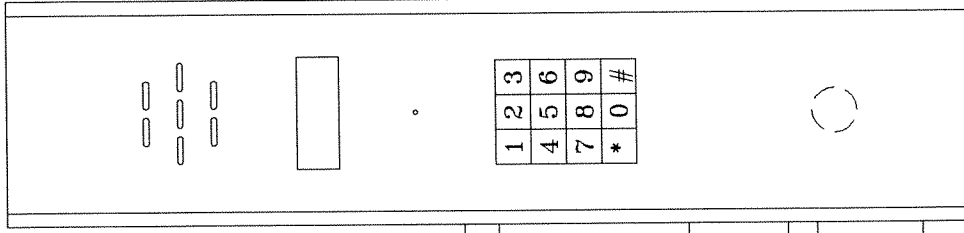
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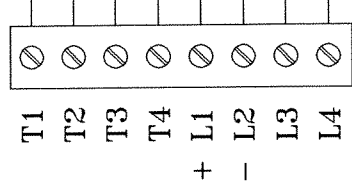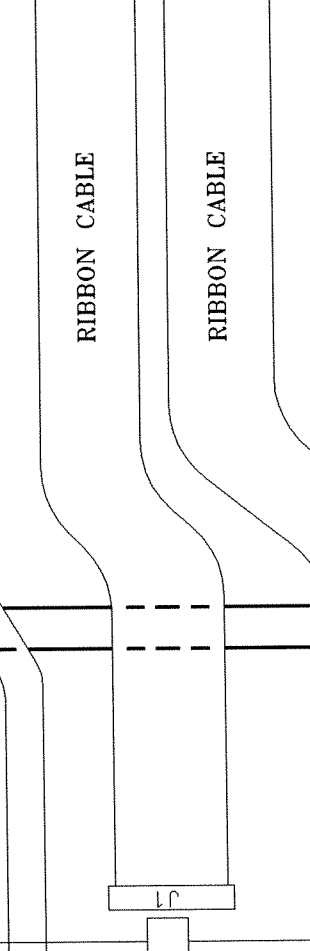TEL: (416) 660-4655
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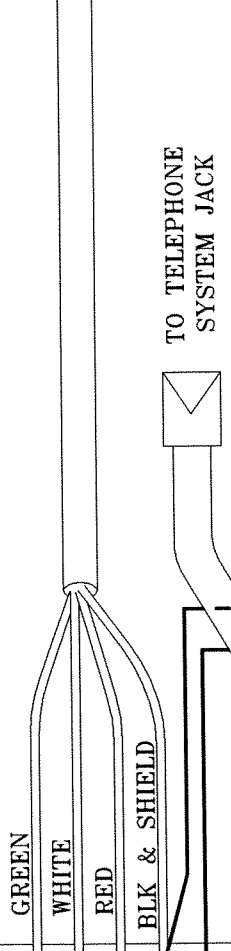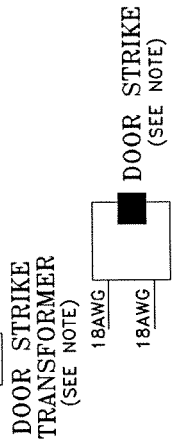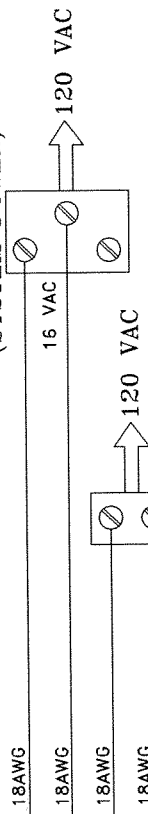*U.S. Distribution Centre*
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KEYPAD & DISPLAY PANEL

1	2	3
4	5	6
7	8	9
*	0	#

PS-3B TRANSFORMER (SYSTEM POWER)

120 VAC
16 VAC
120 VAC

DOOR STRIKE TRANSFORMER (SEE NOTE)

DOOR STRIKE (SEE NOTE)

POSTAL LOCK N.O. SWITCH

LOCK BACK N.O. SWITCH

TO TELEPHONE SYSTEM JACK

RIBBON CABLE

RIBBON CABLE

TO NEXT TEL. ACCESS SYSTEM CONTROLLER

USED FOR MULTIPLE ENTRANCES

CONNECT TERMINALS:
D TO D & M2 TO M2

18AWG
18AWG
18AWG
18AWG

D.C. STRIKE
A.C. STRIKE

18AWG
18AWG

GREEN
WHITE
RED
BLK & SHIELD

T1
T2
T3
T4
+ L1
– L2
L3
L4

P.O.
L.B.
B
S1
S2
+ M1
– M2
D

TEL. LINE

J1

J2

TEL. ACCESS SYSTEM CONTROLLER TC-3000 SERIES

LOUDSPEAKER VOLUME

MICROPHONE VOLUME

PULSE SENSITIVITY ADJUST

PULSE

USED ONLY FOR LCD DISPLAY PANEL

NOTE: DOOR STRIKE AND DOOR STRIKE TRANSFORMER MUST BE COMPATIBLE.

IF USING MIRCOM M-10 DOOR STRIKE, USE SECOND PS-3B TRANSFORMER WITH 8VAC TAP CONNECTED TO TERMINAL T3 & T4.

STRIKE LOAD THAT MAY BE SWITCHED THROUGH THE CONTROL UNIT IS 28 VOLTS AC OR DC, 1.5 AMP. MAXIMUM.

CONNECT THE STRIKE TO THE A.C. (BUZZING) OR D.C. (SILENT) TERMINAL AS REQUIRED BY THE STRIKE.

MIRCOM TECHNOLOGIES LTD.

TITLE: WIRING DIAGRAM FOR T.A. SYSTEM CONTROLLER

USED ON: TC-3000 SERIES

PART NO.: LT-320

DRAWN: N.M.T. 24JAN92   APPROVED:

REV.

MIRCOM TELEPHONE ENTRY SYSTEM

TENANT OPERATING INSTRUCTIONS

Mircom's state-of-the-art door entry system has just been installed in this building to provide you and your guests with an increased level of confidence and security.

The system operates with your existing telephone. Your guest simply dials the code number next to your name on the entry panel directory and your telephone will ring. When answered you will be in communication with your guests.

To unlock the door, dial the digit " 9 " from your telephone. If you have a pushbutton type telephone, hold the button down for at least 1 second. The door will remain unlocked for a number of seconds (normally 10) to allow your guests to enter.

Conversations are limited in duration (normally about 60 seconds) so that the system does not remain occupied for an extended length of time. If you do not wish to release the door for the caller, you may terminate the conversation immediately by hanging up the telephone.

DOC COMPLIANCE

This apparatus complies with the Class "B" limits for interference as specified
in the Canadian Department of Communication's Radio Interference Regulations.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B
digital device, pursuant to Part 15 of the FCC Rules. These limits are designed
to provided reasonable protection against harmful interference when the equipment
is operated in a commercial environment.This equipment generates, uses, and can
radiate radio frequency energy and, if not installed and used in accordance with
the instruction manual, may cause harmful interference to radio communication.
Operation of this equipment in a residential area is likely to cause harmful
interference in which case the user will be required to correct the interference
at his own expense.

To comply with FCC Part 15 the telephone cord must be looped around a ferrite toroid
(Mircom Part Number TR-005) at least three turns.

TELEPHONE
MODULAR
PLUG

TO CONTROL UNIT

FERRITE TOROID
MIRCOM P/N: TR-005

FIELD WIRE

TO TELEPHONE
JACK