

EXIT

Static can undo your best work.

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# Paging Units

 **MELCO**



# Low-cost, reliable paging that helps your customers communicate.

Melco's paging units provide for effective communications throughout your customer's business — from locating people when needed, to making company-wide announcements in an efficient and professional manner. Our complete line of paging equipment meets the individual needs of all your customers, as it includes units which are compatible with key systems, key system intercoms, and PABX's.

The paging function is easily accessed on all units by either depressing a pickup key, dialing an assigned access code, or a combination of both. Units are available for both single and multi-area paging and all provide input for background music if desired.

All Melco paging units are easy to install and are backed by a full five-year warranty.

Melco paging equipment is registered with the F.C.C. The KT-363, KT-364, KA-380, KA380-1 and KA-390 are registered under number AQT9PZ-69166-KX-N. The PA-200A is registered under number AQT9PZ-69433-PX-N and the KA-384 under number AQT9PZ-68419-KX-N.

## Description

### KT-363 and KT-364

Melco's KT-363 and KT-364 paging amplifiers provide paging through the intercom of any 1A1 or 1A2 type key system. The KT-363 provides one 10-watt amplifier, and the KT-364 provides four 3.5-watt amplifiers which may be dial accessed individually or in combinations. Paging areas are accessed by depressing the intercom key and dialing the assigned access code. Both feature volume control, visual busy signal, background music input, and 8 ohm output to speakers.



### KA-380, KA380-1 and KA-390

Melco's KA-380 and KA380-1 provide paging access from a key system intercom to an external amplifier by depressing the intercom key and dialing the assigned access code. The KA-390 provides direct access to a paging amplifier from any industry standard single-line or key telephone instrument. (When using a key system telephone, depress the assigned pickup key. When using a standard single-line instrument, simply lift the receiver.) Features include background music input and optional call attention tone.



### PA-200A

Melco's PA-200A is a paging access unit which provides dial access to an amplifier through a PABX station. A station user may access the paging function by dialing an assigned paging access code. Paging time may be adjusted between 5 and 25 seconds. Optional features include momentary call attention tone and background music input.



## KA-384

The KA-384 provides access to four paging areas from any 1A1 or 1A2 type key system intercom. Only one external amplifier is required. Paging areas are accessed by depressing the intercom key and dialing the assigned access code. Each of the four paging areas may be accessed separately or all four areas may be accessed simultaneously. Features include optional call attention tone and background music input (additional amplifier required).



## Design Features:

FEATURES	KT-363	KT-364	KT-380	KA380-1	KA-390	KA-384	PA-200A
Compatible with Melco's single link key system intercoms	•	•	•	•		•	
Compatible with Melcos KL-19A	•	•	•	•		•	
Compatible with Melco's MAX Communication Systems							•
Provides input for background music	•	•	•	•	•	•	•
Allows for momentary call attention tone			•	•	•	•	•
Provides for volume control	•	•					
Equipped with visual indicators which light to show when an amplifier is in use		•		•			
Provides two sets of independent relay contacts for control of auxiliary equipment			•	•	•	•	•
Provides talk battery to the user's telephone set					•		
Remotely senses loop condition for an idle state before release	•				•		
Mounts in a relay rack or on a backboard	•	•	•	•	•	•	•
Operates from a -24V key system power supply	•	•	•	•	•	•	
Operates from a -24V or -48V PABX battery							•
Connects to the circuit through a 2 x 10 connecting block	•		•		•	•	•
Connects to the circuit through a standard 25-pair connector cable		•		•			



## Installation

All Melco paging equipment may be mounted in a relay rack or on a backboard. All paging units (except the KT-364 and KA380-1) connect to the circuit through a 2" x 10" connecting block. The KT-364 and KA380-1 connect through a standard 25-pair connector cable.

## General Specifications

### Operating voltage range

KA-380, KA380-1, KA-390, KT-363, KT-364, KA-384	-18 to -28V DC -24V DC nom
PA-200A	-24V DC $\pm$ 10% or -48V DC $\pm$ 10%

### Impedance

KA-380, KA380-1, KA-384 and KA-390:	
input/output	600 ohms
KT-363 input	20K ohms AC termination
output	8 ohms
KT-364 input	20K ohm AC termination
output	8 ohms
PA-200A input (terminating resistance)	470 ohms
output	600 ohms

### Amplifier output at -24V DC

KT-363	10 watts RMS
KT-364	3.5 watts RMS per channel (single zone) 2.5 watts RMS per channel (all zones)

### Speaker load

KA-384 (external amplifier required)	4 ohms min 60 watts max or 2A
KT-363 or KT-364	8 ohm speakers recommended

### Operating temperature

range	0° to 50° C 32° to 122° F
-------	------------------------------

### Dimensions

KA-380	7" H x 3.5" W x 1" D
KA380-1	7" H x 5.0" W x 1.5" D
KA-390	7" H x 3.5" W x 1" D
KT-363	7" H x 3.5" W x 1" D
KT-364	7" H x 4.8" W x 1" D
KA-384	7" H x 5.6" W x 1.4" D
PA-200A	7" H x 3.5" W x 1" D

### Weight

KA-380	10 oz
KA380-1	16 oz
KA-390	11 oz
KT-363	10 oz
KT-364	1 lb, 2 oz
KA-384	12 oz
PA-200A	11 oz

## How to Order

Order Melco's paging units through your local supplier or distributor. For more information please contact Melco Labs, Inc.

 **MELCO LABS, INC.**

14408 N.E. 20th Street, Bellevue, WA 98007  
(206) 643-3400 • TWX: 910-443-3040

## KA-380™ PAGING ACCESS (FOR KEY SYSTEM INTERCOMS)

### 1. GENERAL

- 1.01 This practice describes the KA-380 Paging Access Unit and provides instructions on its installation and maintenance.
- 1.02 The KA-380 allows a key system telephone user to access a paging system by operating the intercom key and dialing the paging access station number.
- 1.03 This device has received Registration Number AQT9PZ-69166-KX-N under Part 68 of FCC Rules and Regulations.

### 2. DESIGN FEATURES

- 2.01 The KA-380 can be mounted in a relay rack or on a backboard.
- 2.02 Power requirements are met by the key system power supply.
- 2.03 All connections are made to the circuit through a 2 x 10 connecting block.
- 2.04 Transformer coupling provides 600 ohm input and output impedance.
- 2.05 Background music can be applied at the terminal block.
- 2.06 The station number for accessing the paging system is selected by connecting the appropriate R ( ) lead from the intercom to the KA-380. The selected R lead can be powered by any audible supply 10V/60Hz to 105V/20 Hz or from ground. The KA-380 and the paging equipment are accessed at the end of the ringing signal.
- 2.07 The KA-380 locks to ground from intercom lead PC, J or equivalent after the selected R lead signal has prepared the KA-380 locking circuit. The KA-380 can also be seized and locked directly (without audible supply) when ground is placed on KA-380 lead GS.
- 2.08 Momentary call attention tone from the speakers is optional.
- 2.09 Two sets of independent relay contacts for control of auxiliary equipment are furnished.

### 3. INSTALLATION

- 3.01 Mount the KA-380 on a relay rack or backboard.
- 3.02 Make all connections on the connecting block.
- 3.03 Connect Terminal 1 of the KA-380 to the tip, and Terminal 2 to the ring of the intercom.
- 3.04 Connect R ( ) and PC of the KA-380 to the R ( ) and PC or J of the intercom. To provide locking ground for lead PC, connect lamp ground



Fig. 1

to terminal LG of a Melco intercom. If an equivalent intercom is used, refer to the appropriate schematic for connections.

- 3.05 If the KA-380 will be accessed directly (without audible signal supply), connect lead GS of the KA-380 to the lead of the accessing apparatus which is to furnish locking ground.

- 3.10 Connect B ground and battery from the key system power supply to KA-380 terminals GRD and BAT.

#### 4. MAINTENANCE

- 4.01 The KA-380 is warranted against manufacturing and material defects for five years. No provision is made for field maintenance. Return defective units to the supplier.

## 5. SPECIFICATIONS

Operating voltage . . . . . -18 to -28V DC  
-24V DC nom

Operating current, -24V .....95 ma

## Impedance

input ..... 600 ohms

output ..... 600 ohms

## Frequency response

(coupling) ..... 300 Hz to 3 KHz,  
± 1dB from flat

## Attention tone

frequency.....500 Hz  $\pm$  10%

duration .....1.5 seconds nom

Dimensions .....7.0" x 3.5" x 1.5"

Mounting ..... relay rack or backboard  
(6.5" mtg ctrs)

Operating temperature . . . . . 0° to 50° C  
32° to 122° F

Operating humidity ..... 0 to 95%  
noncondensing

Storage temperature.....-30° to 70° C ←  
-22° to 158° F

Weight unpacked ..... 10 oz ←

## 6. ORDERING GUIDE

- TWX: 910-443-3040

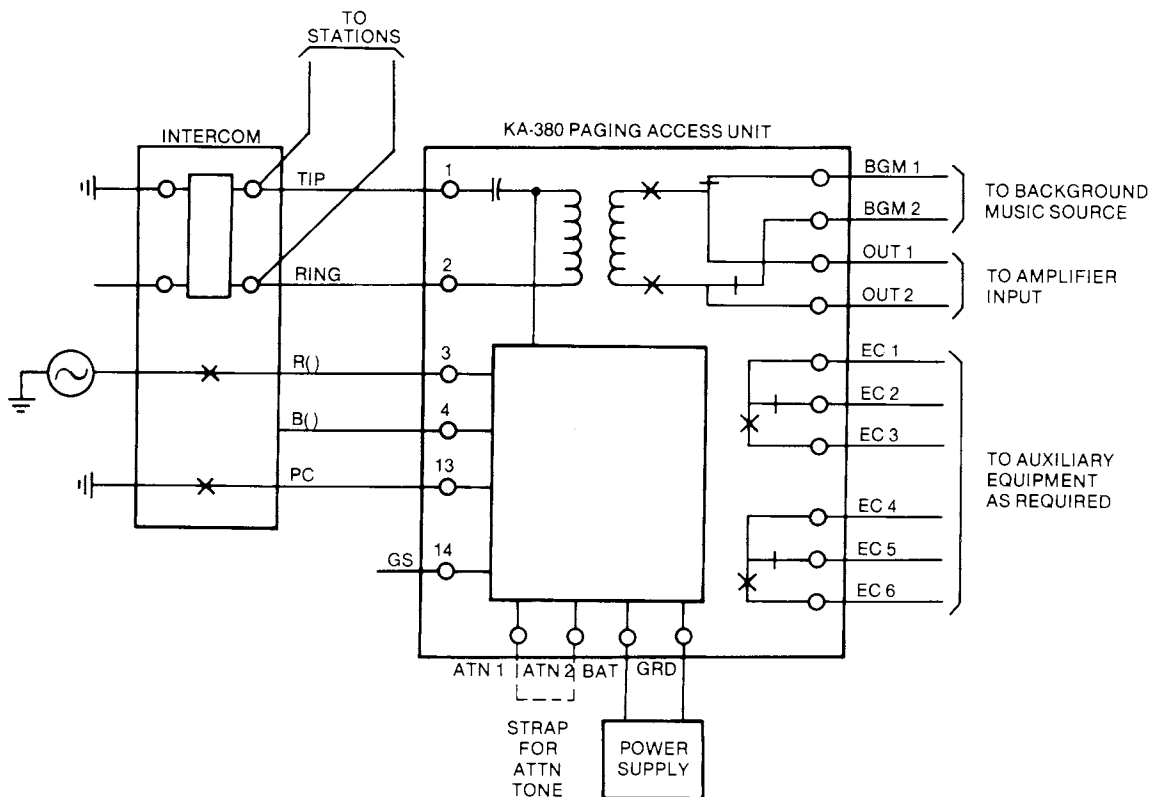


Fig. 2 — Applications Schematic.

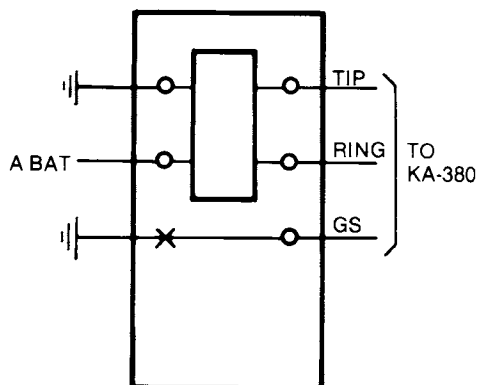


Fig. 3 — Connections of Apparatus to Access KA-380 (without Audible Supply).

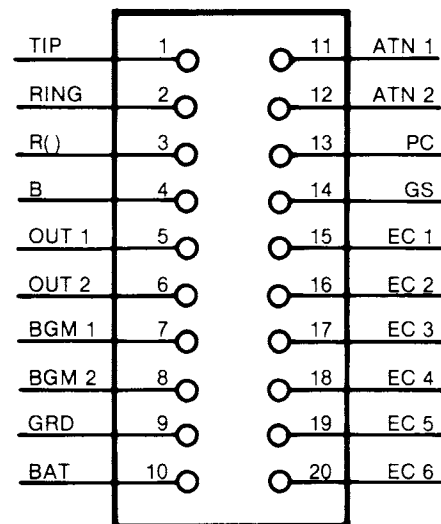


Fig. 4 — Connecting Block Terminal Assignments.



## KA-384™ FOUR-AREA PAGING ACCESS UNIT

### 1. GENERAL

1.01 The KA-384 Four-Area Paging Access Unit provides access to four paging areas from an intercom of a 1A1 or 1A2 type key system. Paging areas are accessed by operating the intercom key and dialing the assigned access number.

→ Only one external amplifier is required for paging. If background music is desired, an additional amplifier is required.

1.02 This device has received Registration Number AQT9PZ-68419-KX-N under Part 68 of FCC Rules and Regulations.

### 2. DESIGN FEATURES

2.01 The KA-384:

- can be used with all Melco intercoms, or any intercom that provides a standard ringing signal and a locking ground when a station is off-hook.
- • operates at the end of the ringing cycle.
- switches up to 60 watts in each area.
- provides for momentary call attention tone if desired.
- provides two sets of independent relay contacts for control of auxiliary equipment.
- locks up to ground through the off-hook latching contacts (PC or J) of the intercom.
- operates from a 24-volt key system power supply.
- mounts in a relay rack or on a backboard.
- connects to the circuit through a 2 x 10 connecting block and a 10-screw terminal strip.
- • provides for background music with the use of another amplifier. (An external music source is required.)

2.02 Each of the four paging areas may be accessed separately or all four areas may be accessed simultaneously (all area page). To

access an area, the assigned access number for that area is dialed. Access numbers are assigned to each of the four areas and to all-area page. If desired, two or three areas may be accessed with one access number by connecting as described in Paragraph 3.03. Background music is turned off in the area accessed for paging.

### 3. INSTALLATION

3.01 Mount the KA-384 in a relay rack or on a backboard.

3.02 Make all connections on the 2 x 10 connecting block and the 10-screw terminal strip of the KA-384. (See Tables A and B.)



Fig. 1

3.03 Connect TIP, RING, PC (locking ground), and R1 through R5 from the KA-384 to the intercom. Figures 3, 4 and 5 show connections for various intercom installations. The selected R() leads determine the access number for each of the four areas and for all-area page. If desired, two



or three areas may be accessed by one access number by strapping the KA-384 R() leads in the desired combination, then connecting the selected R() leads to the KA-384.

- 3.04 Connect B BAT and B GRD of the KA-384 to the power supply.
- 3.05 If momentary call attention tone before paging is desired, strap ATN 1 and ATN 2 of the KA-384.
- 3.06 Connect OUT 1 and OUT 2 of the KA-384 to the 600 ohm input of the paging amplifier. Connect PAGE SPK IN and one of the area SPK COM terminals of the KA-384 to the output of the amplifier.
- 3.07 When background music is desired, connect BGM SPK IN and one of the area SPK COMS to the output of the BGM amplifier.
- 3.08 Connect the SPK and COM leads of the KA-384 to the speakers for each paging  
↳ area. See Figure 3.
- 3.09 Connect the EC leads of the KA-384 to auxiliary equipment as required.

#### 4. MAINTENANCE

- 4.01 If no output is detected, verify power connections and fuses. Ensure that screw connections on the 10-screw terminal strip are tight and check connections on the 2 x 10 connecting block. Test by replacing with a KA-384 known to be serviceable.
- 4.02 No provision is made for field maintenance or repair. If defective, return the unit to the supplier for servicing.
- 4.03 The KA-384 is warranted against manufacturing and material defects for five years. If it fails within that time, it will be repaired or replaced without charge. See the Melco Warranty Service Policy for return and repair details.

## 5. SPECIFICATIONS

**Operating voltage range**  
**(B BAT)** ..... -18 to -28V DC  
                                       -24V DC nom

Current at -24V DC ..... 300 ma max

Impedance:

input to KA-384 . . . . .	600 ohms
output to amplifier . . . . .	600 ohms

## Frequency response

(coupling) . . . . . 300 Hz to 3 KHz  
± 2dB from flat

Call attention tone:

frequency.....500 Hz  $\pm$  10%  
duration .....1 second nom

R ( ) lead input . . . . . 10V 60 Hz to 105V 20 Hz  
or ground

Speaker load per area .....4 ohms min  
60 watts max or 2A

Relay contact ratings . . . . . 2A at 30V (60W)  
100V max

Operating temperature range . . . . . 0° to 50°C  
32° to 122°F

Operating humidity ..... 0 to 95% ←  
(noncondensing)

Mounting .....relay rack or backboard

Connections . . . . . 2 x 10 connecting block and  
10-screw terminal strip

Housing.....epoxy coated aluminum

Dimensions . . . . . 7" x 5.6" x 1.4"

Weight . . . . . 1 lb. 4 oz.

## 6. ORDERING GUIDE

- 6.01 Order as follows:  
(QTY) KA-384 FOUR-AREA PAGING  
ACCESS UNIT  
from your local supplier or distributor.
- 6.02 Technical assistance on the KA-384 or any  
Melco product is available from:  
  
MELCO LABS, INC.  
14408 N.E. 20th Street  
Bellevue, WA 98007  
  
(206) 643-3400  
TWX: 910-443-3040

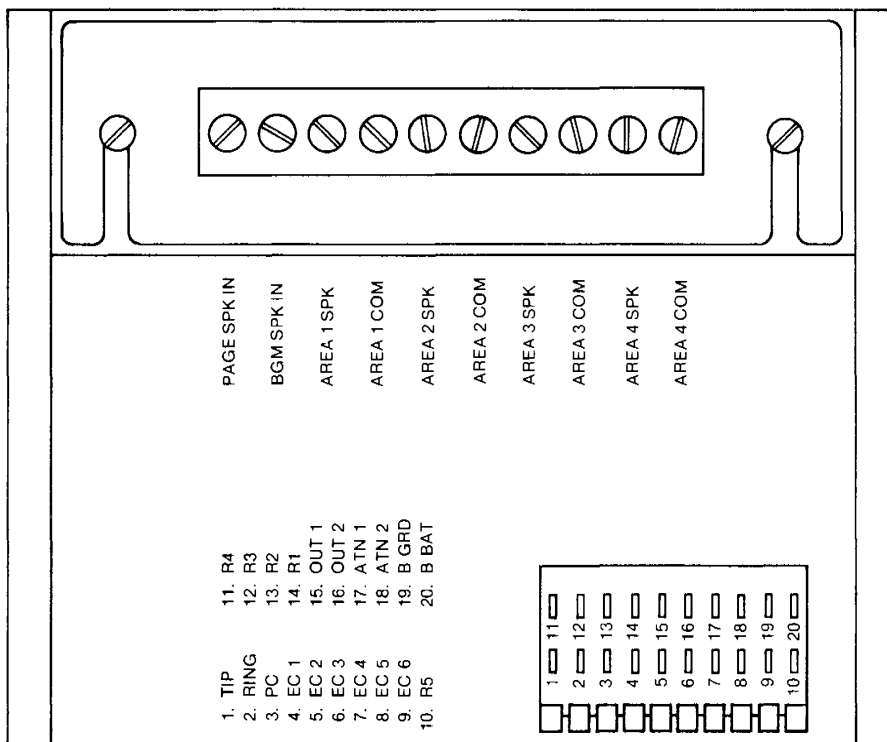
→ **TABLE A**  
Connecting Block Terminal Assignments

TERMINAL NO.	DESIGNATION	NOTES
1	TIP	TIP OF INTERCOM
2	RING	RING OF INTERCOM
3	PC	LOCKING GROUND
4	EC 1	COMMON (1)*
5	EC 2	NORMALLY CLOSED (1)*
6	EC 3	NORMALLY OPEN (1)*
7	EC 4	COMMON (2)*
8	EC 5	NORMALLY CLOSED (2)*
9	EC 6	NORMALLY OPEN (2)*
10	R5	ALL-AREA PAGE R() LEAD
11	R4	AREA 4 R() LEAD
12	R3	AREA 3 R() LEAD
13	R2	AREA 2 R() LEAD
14	R1	AREA 1 R() LEAD
15	OUT 1	TO INPUT OF PAGING AMPLIFIER
16	OUT 2	TO INPUT OF PAGING AMPLIFIER
17	ATN 1	ATTENTION TONE STRAP
18	ATN 2	ATTENTION TONE STRAP
19	B GRD	B GROUND FROM POWER SUPPLY
20	B BAT	B BATTERY FROM POWER SUPPLY

\*AUXILIARY RELAY CONTACTS

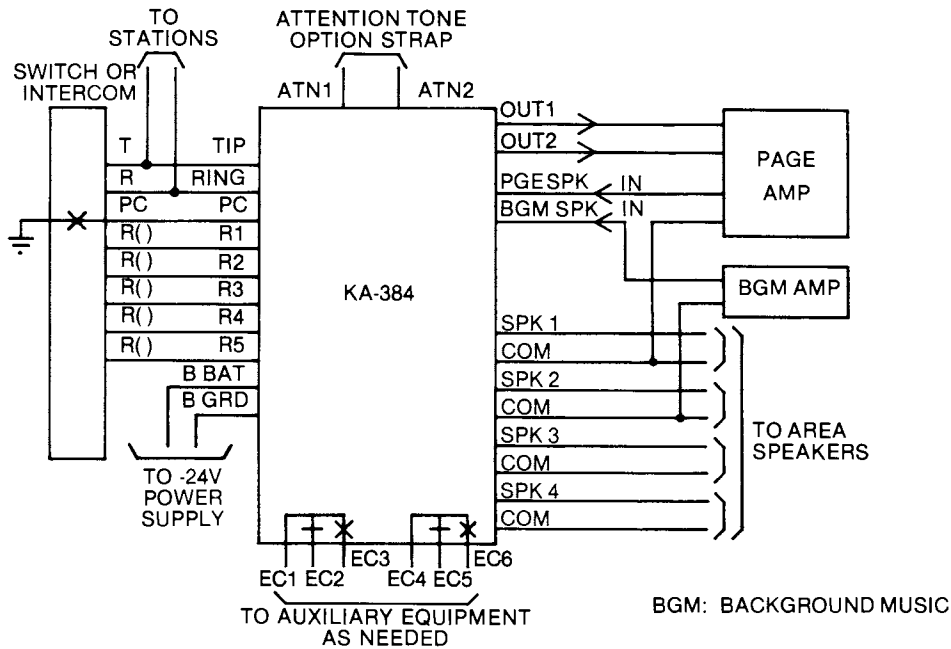
→ **TABLE B**  
Screw Terminal Assignments

TERMINAL NO.	DESIGNATION	NOTES
1	PAGE SPK IN	FROM OUTPUT OF PAGING AMPLIFIER
2	BGM SPK IN	FROM OUTPUT OF MUSIC AMPLIFIER
3	AREA 1 SPK	TO AREA ONE SPEAKER
4	AREA 1 COM	TO AREA ONE SPEAKER RETURN
5	AREA 2 SPK	TO AREA TWO SPEAKER
6	AREA 2 COM	TO AREA TWO SPEAKER RETURN
7	AREA 3 SPK	TO AREA THREE SPEAKER
8	AREA 3 COM	TO AREA THREE SPEAKER RETURN
9	AREA 4 SPK	TO AREA FOUR SPEAKER
10	AREA 4 COM	TO AREA FOUR SPEAKER RETURN

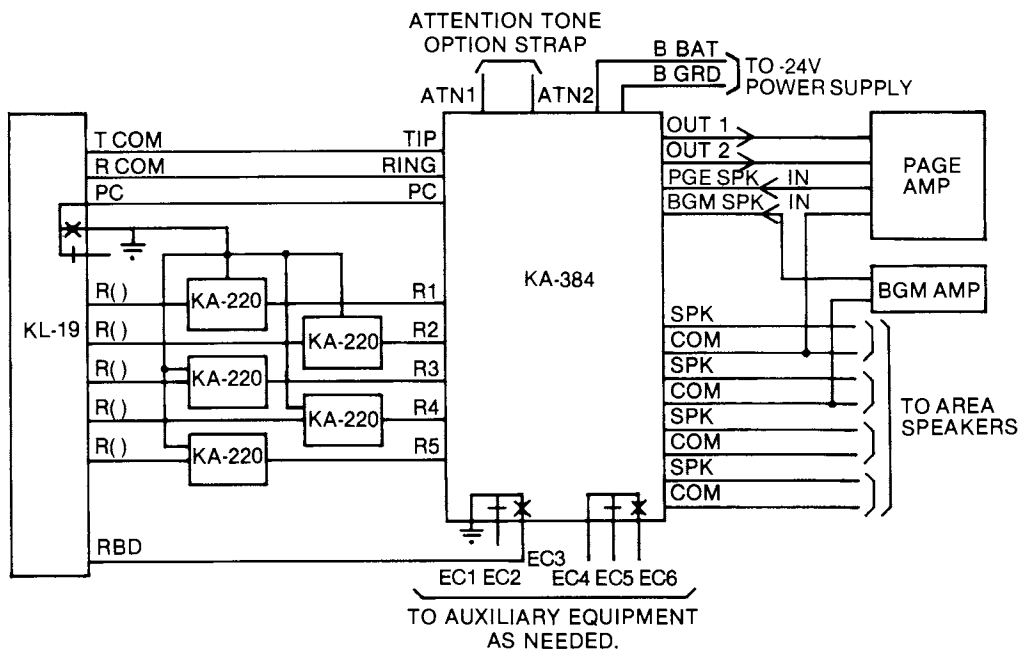


**Fig. 2 — Front View of KA-384 Showing Connecting Block and Screw Terminal Assignments.** ←





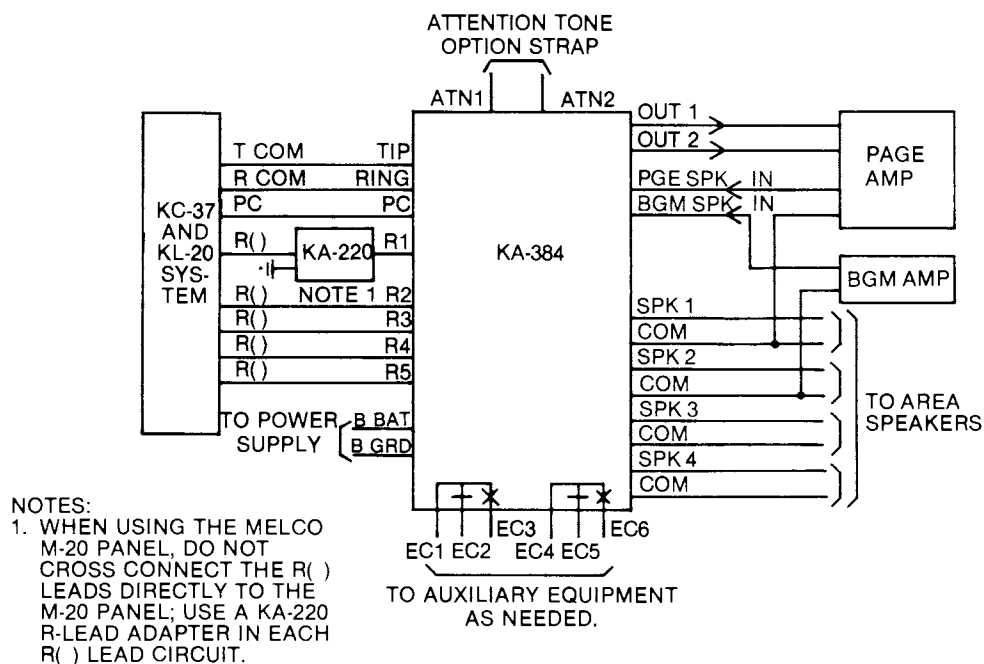
→ Fig. 3 — Application Schematic of Melco Intercom and KA-384.



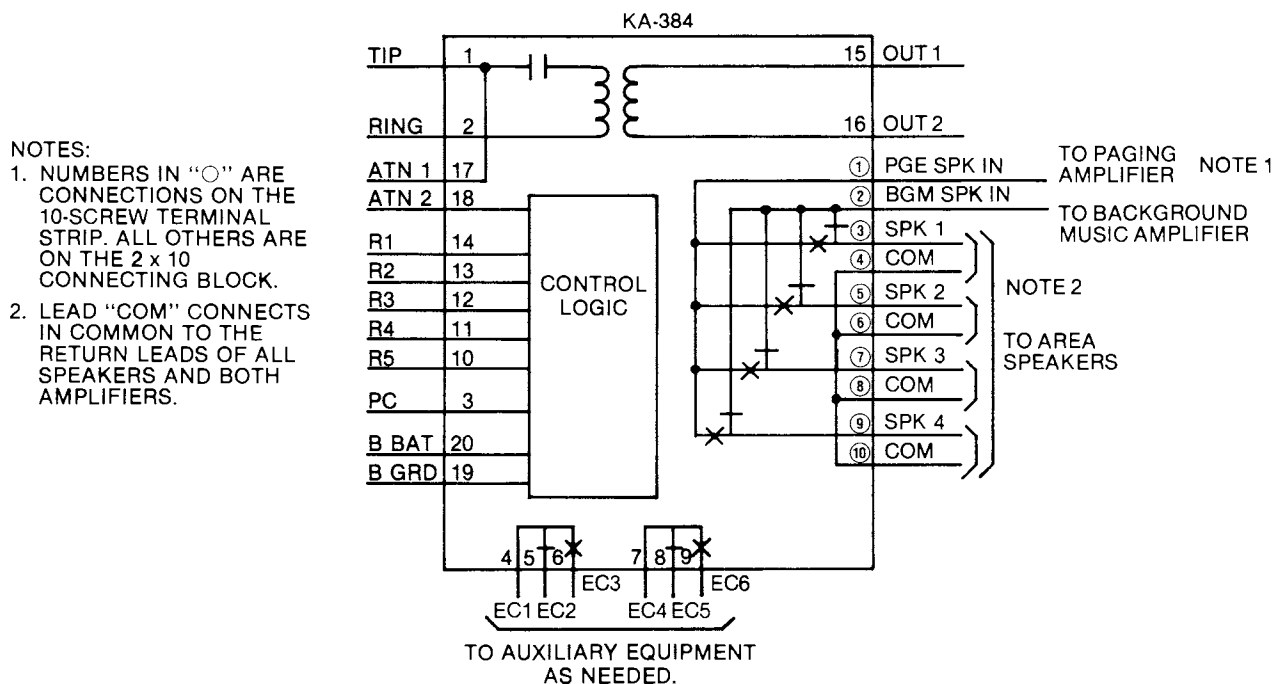
NOTES:

1. USE A KA-220 R-LEAD ADAPTER IN EACH R( ) LEAD CIRCUIT WHEN USING THE KL-19.

→ Fig. 4 — Application Schematic of Melco KL-19 Two-Link Intercom and KA-384.



→ Fig. 5 — Application Schematic of Melco KC-37 Intercom/KL-20 Two-Link Intercom Adapter System and KA-384.



→ Fig. 6 — Functional Schematic of KA-384.



## KA-390™ DIRECT PAGING ACCESS — KTU

### 1. GENERAL

1.01 The KA-390 Direct Paging Access provides access to a paging amplifier through a dedicated key of a key telephone or through a single line telephone. The amplifier is accessed by depressing the paging access pick-up key and lifting the receiver. The KA-390 provides its own talk battery feed.

1.02 The KA-390 has been granted Registration Number AQT9PZ-69166-KX-N under Part 68 of FCC Rules and Regulations.

### 2. DESIGN FEATURES

2.01 The KA-390:

- mounts on a relay rack or on a backboard.
- operates from a 24-volt key system power supply.
- connects through a 2 x 10 connecting block.
- provides talk battery to the caller.

2.02 The KA-390 is held as long as the paging access pick-up key is depressed and a receiver is off-hook.

2.03 Background music can be applied at the connecting block.

2.04 Momentary call attention tone from the speakers is optional.

2.05 Two sets of independent relay contacts for control of auxiliary equipment are furnished.

2.06 Transformer coupling provides 600 ohms input and output impedance.

### 3. INSTALLATION

3.01 Mount the KA-390 on a relay rack or backboard.

3.02 Make all connections on the ten row connecting block of the KA-390.

3.03 Connect TIP and RING to the pickup buttons assigned to paging or to the paging telephone.

3.04 Connect OUT 1 and OUT 2 of the KA-390 to an amplifier of 600 ohms input impedance. Standard twisted pair wire can be used. (Amplifiers of high impedance may require shielded wire.)

3.05 Connect BGM 1 and BGM 2 of the KA-390 to the background music source. For best results, the music source and the amplifier input should be of the same impedance.



Fig. 1

3.06 If call attention tone before paging is desired, strap ATN 1 and ATN 2.

3.07 Connect the EC leads of the KA-390 to the auxiliary equipment as required.

3.08 Connect A BAT, A GRD, B BAT and B GRD of the KA-390 to the key system power supply.

### 4. MAINTENANCE

4.01 If no output is detected, verify power con-

nections and fuses. Test by replacement with a KA-390 unit known to be serviceable.

4.02 No provision is made for field maintenance or repair. If defective, return the unit to the supplier for servicing.

**4.03** The KA-390 is warranted against manufacturing and material defects five years. If it fails within that time it will be repaired or replaced at no charge. See the Melco Warranty Service Policy.

## 5. SPECIFICATIONS

Operating voltage	
range	-18V DC to -28V DC -24V DC nom
Current at -24V DC	100 ma operated
Loop limit	1200 ohms
Impedance:	
Input	600 ohms
Output	600 ohms
Longitudinal balance	better than -60 dB 200 Hz to 1 KHz
Frequency Response	
(coupling)	300 Hz to 3 kHz ± 1.5 dB from flat

Call Attention Tone:

Frequency ..... 500 Hz  $\pm$  10%  
Duration ..... 1.5 secs nom

### Operating temperature

range.....0° to 50° C  
32° to 122° F

### Operating humidity

noncondensing

Mounting . . . . .

Dimensions ..... 7.0" x 3.5" x 1.5"

### Use cases

Housing . . . . . plastic

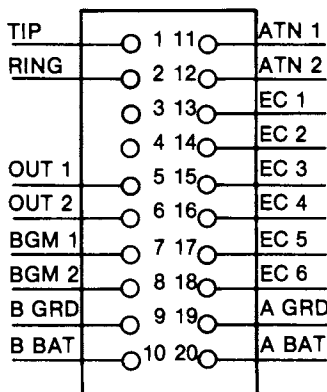
## 6. ORDERING GUIDE

6.01 Order as follows:

(QTY) KA-390 DIRECT PAGING ACCESS  
from your local supplier or distributor.

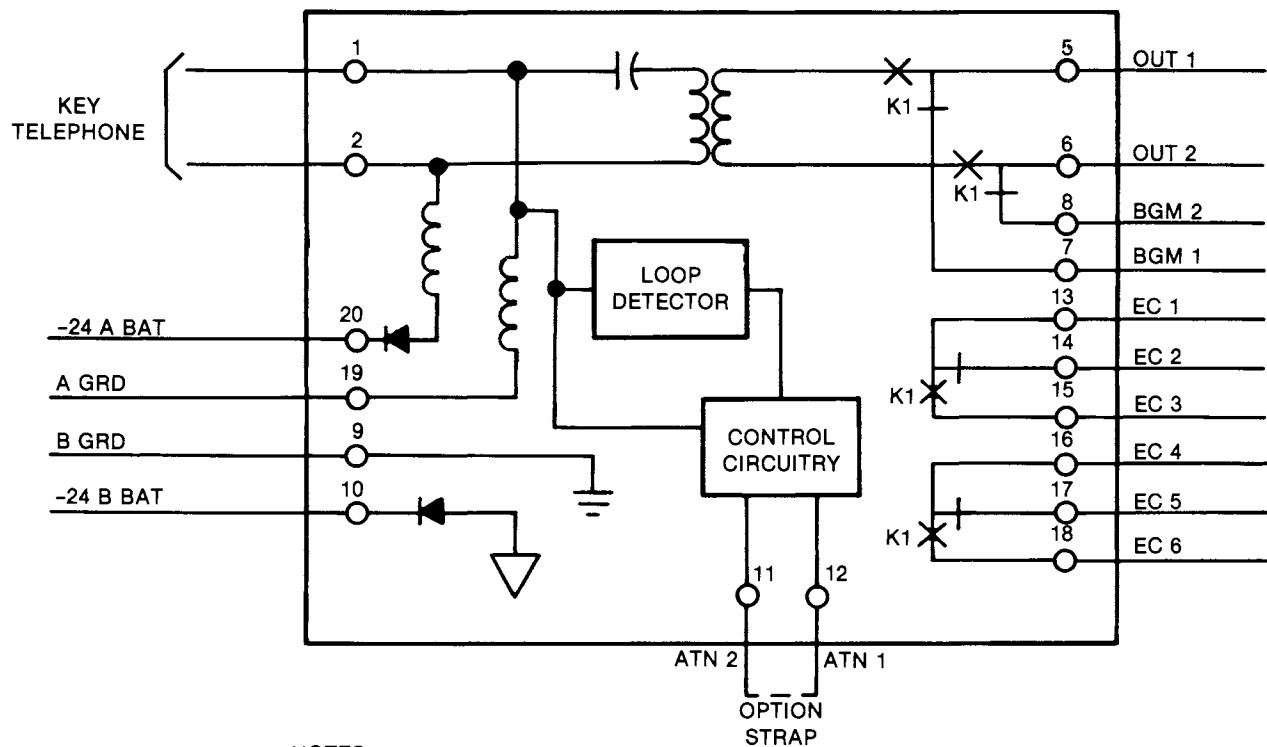
6.02 Technical assistance on the KA-390, or any Melco product, is available from:

**MELCO LABS, INC.**  
14408 N.E. 20th Street  
Bellevue, WA 98007  
(206) 643-3400  
TWX: 910-443-3040



**Fig. 2 — Connecting Block Pin Assignments.**





NOTES:  
1. STRAP ATN 1 AND ATN 2 FOR ATTENTION TONE BEFORE PAGING.

Fig. 3 — Functional Schematic of the KA-390.

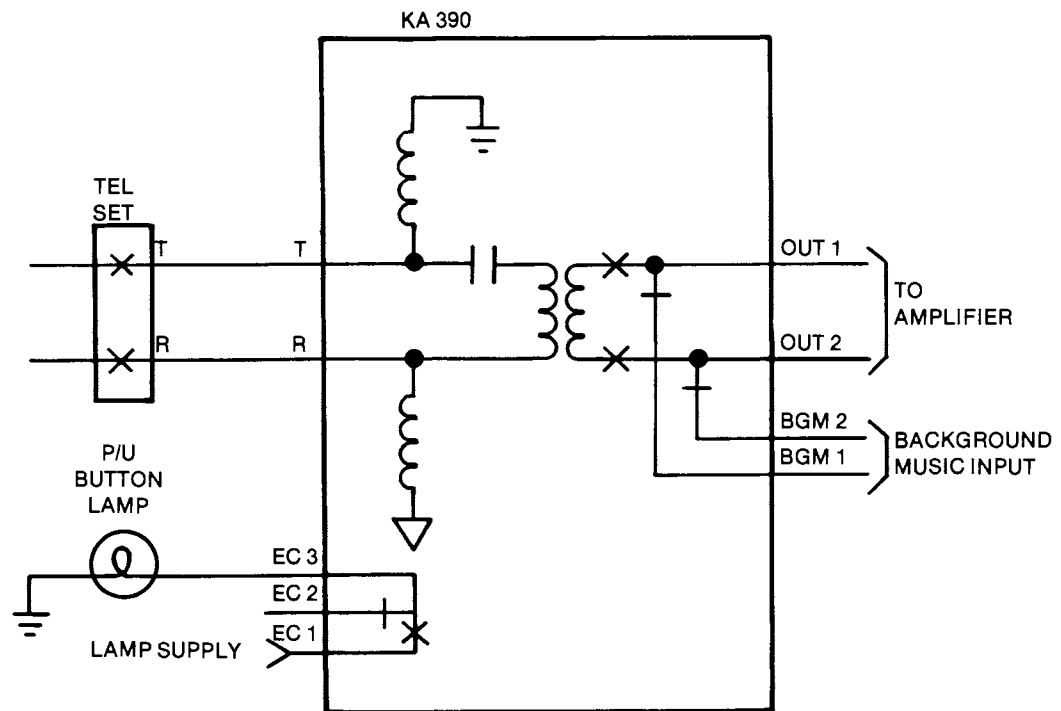


Fig. 4 — Application Schematic of the KA-390 Showing Use of Extra Contacts for Lamp Control.

## KT-363™ PAGING AMPLIFIER — KTU

### 1. GENERAL

1.01 The KT-363 Paging Amplifier provides for paging through the intercom of a 1A1 or 1A2 type key system. The paging area is accessed by operating the intercom pickup button and dialing the assigned paging access number.

→ 1.02 The device has received Registration Number AQT9PZ-69166-KX-N under Part 68 of FCC Rules and Regulations. It has no ringer equivalence  
→

### 2. DESIGN FEATURES

2.01 The KT-363:

- mounts in a relay or on a backboard.
- operates from a 24-volt key system power supply.
- connects to the circuit through its 2 x 10 connecting block.
- does not require off-hook latching through contacts of the intercom system.
- provides volume control by adjusting a screw accessible through a hole in the front cover.

2.02 The KT-363 amplifier delivers 10 watts into an 8 ohm load. One 8 ohm speaker or a speaker arrangement equivalent to an 8 ohm impedance is recommended.

2.03 The selected R ( ) lead from the intercom will operate the pager from any audible supply: 10V/60Hz to 105V/20Hz or from ground.

### 3. INSTALLATION

3.01 Mount the KT-363 on a wall, in a relay rack or on a backboard and make connections to the KT-363 connecting block as shown in Figure 2. The selected R ( ) lead determines the intercom station number that accesses paging. Optional speaker arrangements are shown in Figure 5.

3.02 Adjust the amplifier for appropriate volume. The volume adjustment screw is accessed through the screwdriver hole in the top of the case.

### 4. MAINTENANCE

4.01 If no output is detected, verify power connections and fuses. Test the KT-363 by replacing it with another of known serviceability.

4.02 The KT-363 is warranted against manufacturing and material defects for five ← years. If it becomes defective within that time, it will be repaired or replaced without charge. See the Melco Warranty Service Policy for return and repair details.



Fig. 1

### 5. SPECIFICATIONS

Operating voltage ..... -21V DC to -28V DC  
(24V DC nom)

Current  
(-24V DC) ..... 20 ma idle  
620 ma max output

Amplifier output  
(-24V DC) ..... 10 watts rms  
Load ..... 8 ohm load recommended  
(Figure 5)

Frequency response ..... 300 Hz to 3K Hz  
flat ± 3dB

Maximum voltage gain ..... 31dBV ←



- MELCO LABS, INC.**  
14408 N.E. 20th Street  
Bellevue, WA 98007  
(206) 643-3400  
TWX: 910-443-3040



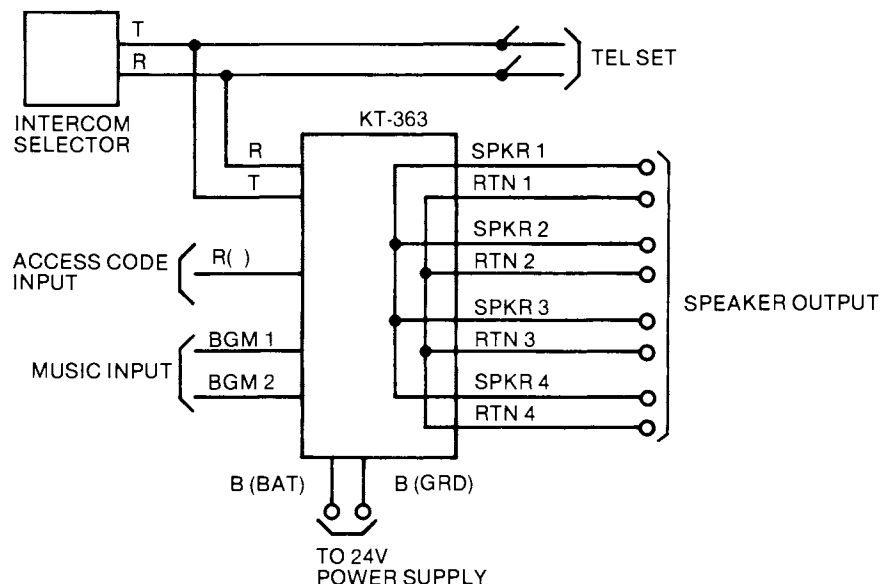


Fig. 3 — Applications Schematic of KT-363.

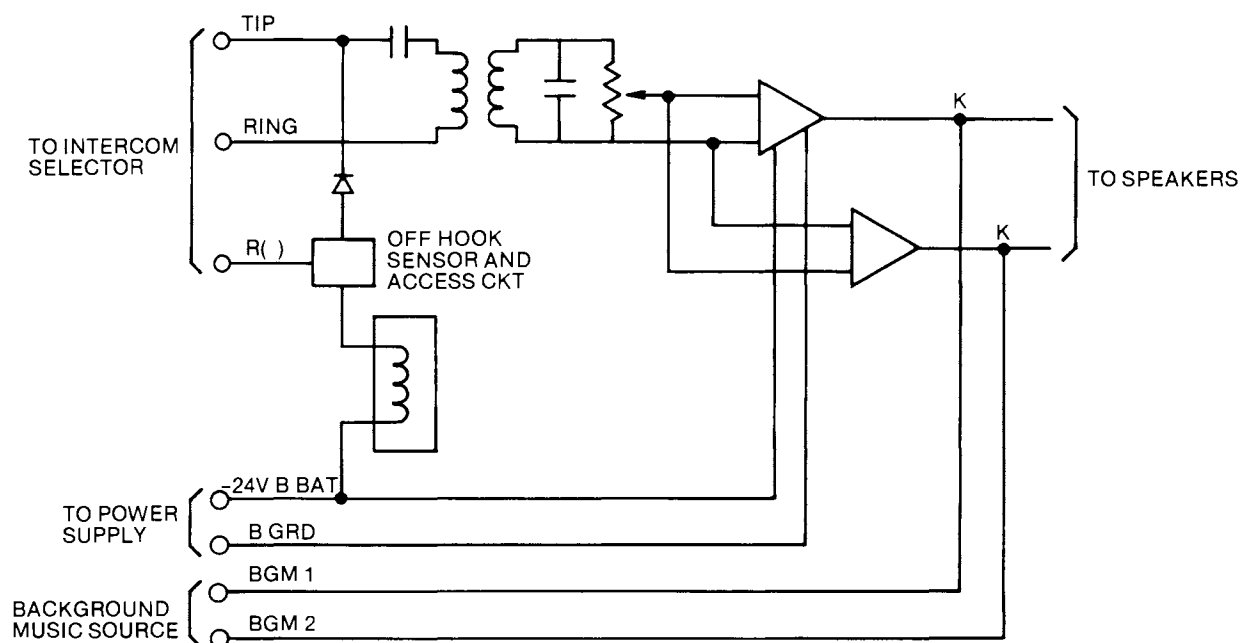


Fig. 4 — Functional Schematic of KT-363.

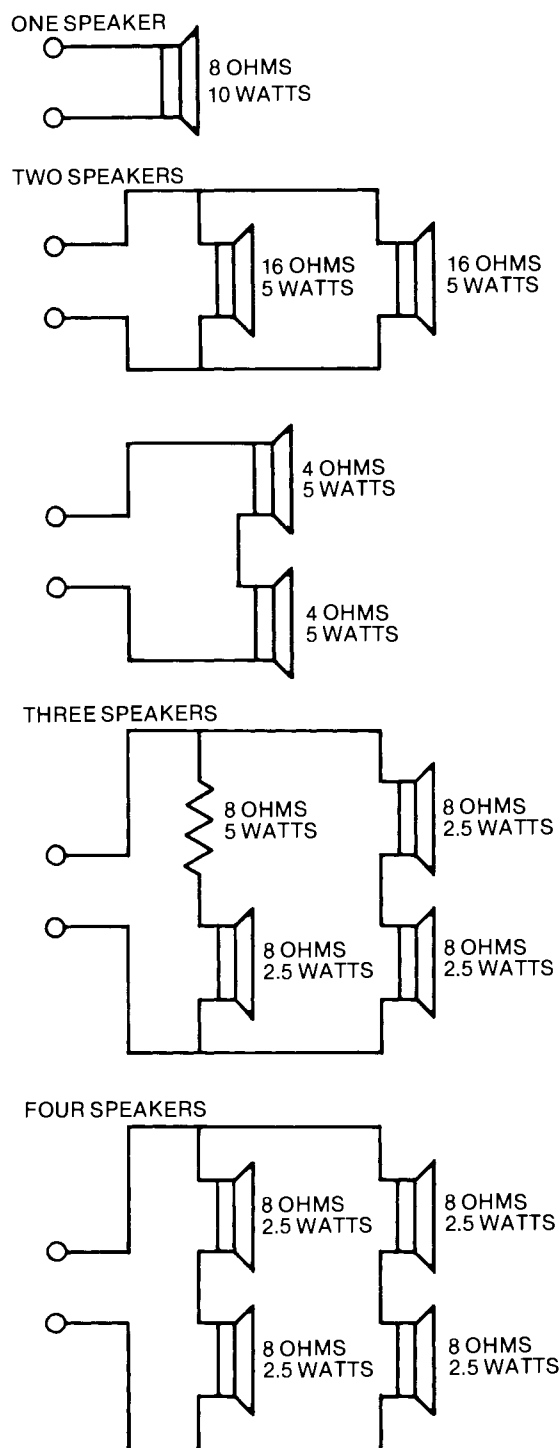


Fig. 5 — Optional Speaker Arrangements.



## KT-364™ FOUR AREA PAGING SYSTEM KEY TELEPHONE UNIT

### 1. GENERAL

1.01 The KT-364 Paging System provides access to any or all of four areas for paging through the intercom of a 1A1 or 1A2 type key system.

1.02 To comply with FCC Regulations, the following requirements must be met:

- a. Upon installation, the FCC Registration Number AQT9PZ-69166-KX-N must be reported to the telephone company and recorded in logs kept by the installation and maintenance personnel.
- b. This unit must be installed by grantee, grantee's authorized agents, equipment manufacturers, telephone companies, or agents authorized under Part 68, of the FCC Rules and Regulations.
- c. Installation of this device can only be made with the permission of the owner of the host equipment.
- d. If this unit malfunctions, the telephone company may disconnect service temporarily. If disconnection is necessary, the telephone company must attempt to notify the user in advance, if possible. If not, they must notify the user as soon as they are able. Repair work on this unit must be done by Melco Labs or its authorized agent.

### 2. DESIGN FEATURES

2.01 To access an area, the assigned station number for that area is dialed. Station numbers are assigned to each of the four areas and to all four areas together. If desired, two or three areas may be accessed with one station number by connecting as described in paragraph 3.03.

2.02 Each area has an individual amplifier which delivers 3.5 watts into an 8 ohm load. Indicators (LED's) on the front of the unit light when an amplifier is in use. The KT-364 is not recommended for use as a preamplifier.

2.03 Volume for 4, 8 or 16 ohm speakers can be changed at the front of the unit with a

screw adjustment adjacent to the LED. Independent volume control at any speaker in the network can be attained by replacing the speaker network as shown in Fig. 5.

2.04 The KT-364 provides for background music input. Paging in one area does not disrupt background music in other areas.

2.05 Area selection R leads will operate the pager from any common audible supply from 10V/60 Hz to 105V/20 Hz.

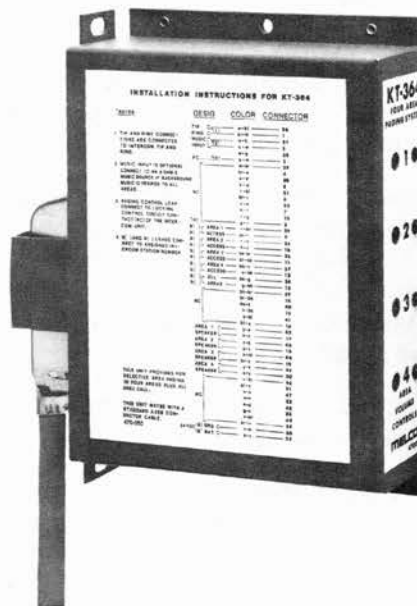


Fig. 1

2.06 The KT-364:

- provides access circuits and line bridging transformers.
- locks up to ground through the off-hook latching contacts (PC or J) of any intercom system.
- operates from a 24-volt key system power supply.
- mounts in a key system cabinet, a relay rack or on a wall.
- connects through its plug with an A25B or equivalent 25-pair connector cable.

### 3. INSTALLATION

3.01 Mount the KT-364 in an apparatus cabinet equipped with 7" x 1½" mounting space, on a relay rack or on a wall.

3.02 Connect an A25B or equivalent 25-pair connector cable to the KT-364 plug with the clamp provided. Terminate the cable on a 66 type connecting block.

3.03 Cross connect T, R, PC and five R ( ) leads to the intercom as shown in Fig. 3. More than one area may be accessed by one station number by strapping the KT-364 R ( ) leads of the desired combination to the assigned intercom R ( ) lead.

3.04 Cross connect speakers, music input, "B" BAT and "B" GRD. Optional speaker arrangements are shown in Fig. 4.

3.05 Connect background music input to 8 ohm source if desired. Background music is not amplified by the KT-364. The load on the background music source will vary from maximum when no areas are being paged to open circuit when all areas are being paged.

3.06 Test for correct area selection from the intercom. The selected area LED will light.

3.07 Adjust each area amplifier for appropriate volume. The adjustment screw is within the hole next to the area LED. If independent volume control is desired for any speaker in the network, replace the speaker with the L-Pad attenuator/speaker network as shown in Fig. 5.

### 4. MAINTENANCE

4.01 If no output is detected, verify power connections and fuses. Check cable plug and connector for dirt, corrosion and insufficient contact spring tension. Test the KT-364 by replacing it with a substitute unit.

4.02 No provision is made for field adjustment or repair. If defective, return unit to supplier for servicing.

4.03 The KT-364 is warranted against manufacturing and material defects. If it fails within the warranty period it will be repaired or replaced

at no charge. Opening a sealed case will void the Warranty.

### 5. SPECIFICATIONS

5.01:

Operating voltage ..... -21 to -28V DC  
-24V DC nom  
Current (-24V DC) ..... 40 mA idle  
1.25A max (all areas)

\*Max output/amplifier  
one area ..... 3.5 watts rms  
all areas ..... 2.5 watts rms

\*Max gain/amplifier  
one area ..... 30.5 or 29.7 dBv  
all areas ..... 25.8 or 28.2 dBv

\*Freq. response ..... 300 Hz to 3K Hz  
flat ± 3dB

Input impedance ..... 20K ohms AC  
(no DC current)

Load impedance ..... 8 ohms  
(Figs. 3, 4, 5)

Total distortion ..... less than 10%

Min. input level ..... -13dBm

\*With supply voltage at -24V DC

5.02 Maximum cable length for half power to 8 ohm speakers:

18 ga	600 ft.
22 ga.	204 ft.
24 ga.	127 ft.
26 ga.	79 ft.
or 4 ohms	

### 6. ORDERING GUIDE

6.01 Order the KT-364 as follows:

(QTY) KT-364 UNIT TEL KEY  
from your local supplier or distributor.

6.02 For further information and assistance contact:

MELCO LABS, INC.  
P.O. Box 6909  
Bellevue, WA 98008-0909  
(206) 643-3400  
TWX: 910-443-3040

DESIGNATION	COLOR	CONNECTOR
TIP	W-BL	26
RING	BL-W	1
MUSIC	W-O	2
INPUT	O-W	2
PC	W-G	28
	G-W	3
	W-B	29
	BR-W	4
	W-S	30
	S-W	5
	R-BL	31
	BL-R	6
	R-O	32
	O-R	7
	R-G	33
	G-R	8
B ( )	R-BR	34
R ( )	BR-R	9
B ( )	R-S	35
R ( )	S-R	10
B ( )	BK-BL	36
R ( )	BL-BK	11
B ( )	BK-O	37
R ( )	O-BK	12
B ( )	BK-G	38
R ( )	G-BK	13
	BK-BR	39
	BR-BK	14
	BK-S	40
	S-BK	15
	Y-BL	41
	BL-Y	16
	Y-O	42
	O-Y	17
	Y-G	43
	G-Y	18
	Y-BR	44
	BR-Y	19
	Y-S	45
	S-Y	20
	V-BL	46
	BL-V	21
	V-O	47
	O-V	22
	V-G	48
	G-V	23
	V-BR	49
	BR-V	24
24V DC (B) GRD	V-S	50
24V DC (B) BAT	S-V	25

NOTES:

1. TIP AND RING CONNECT TO INTERCOM TIP AND RING.
2. CONNECT AN 8Ω MUSIC SOURCE IF BACKGROUND MUSIC IS DESIRED TO ALL AREAS.
3. CONNECT LEAD PC TO LOCKING CONTROL CIRCUIT (PC OR V) OF THE INTERCOM. CONNECT LEAD LG OF THE INTERCOM TO LAMP GROUND.
4. B ( ) AND R ( ) LEADS CONNECT TO ASSIGNED INTERCOM STATION NUMBER.

Fig. 2 — Connections to KT-364.

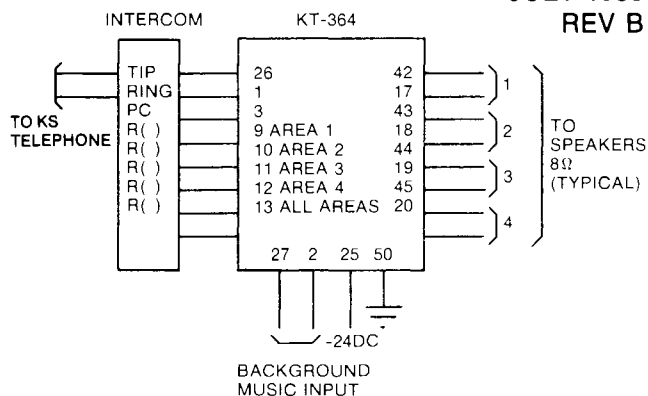


Fig. 3 — Applications Schematic of KT-364.

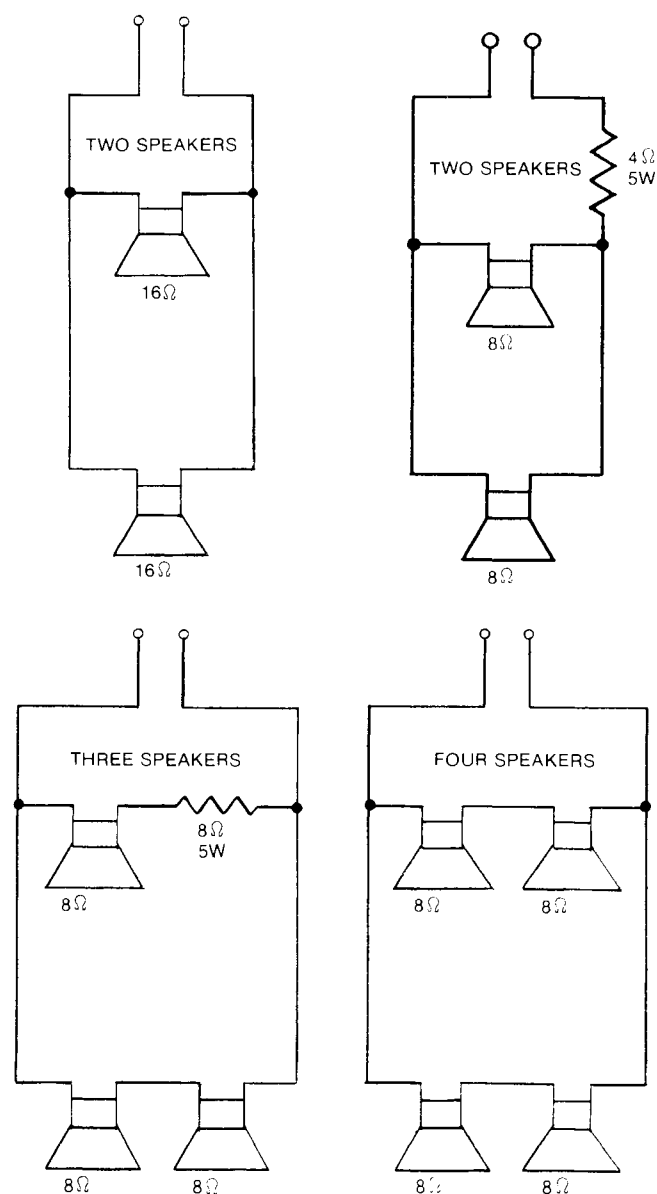


Fig. 4 — Optional Speaker Arrangements.



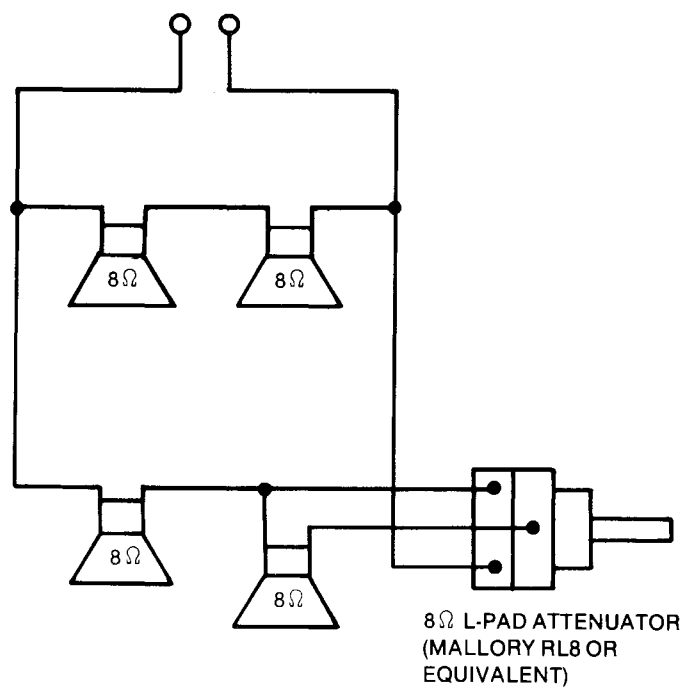


Fig. 5 — Independent Volume Control Configuration.

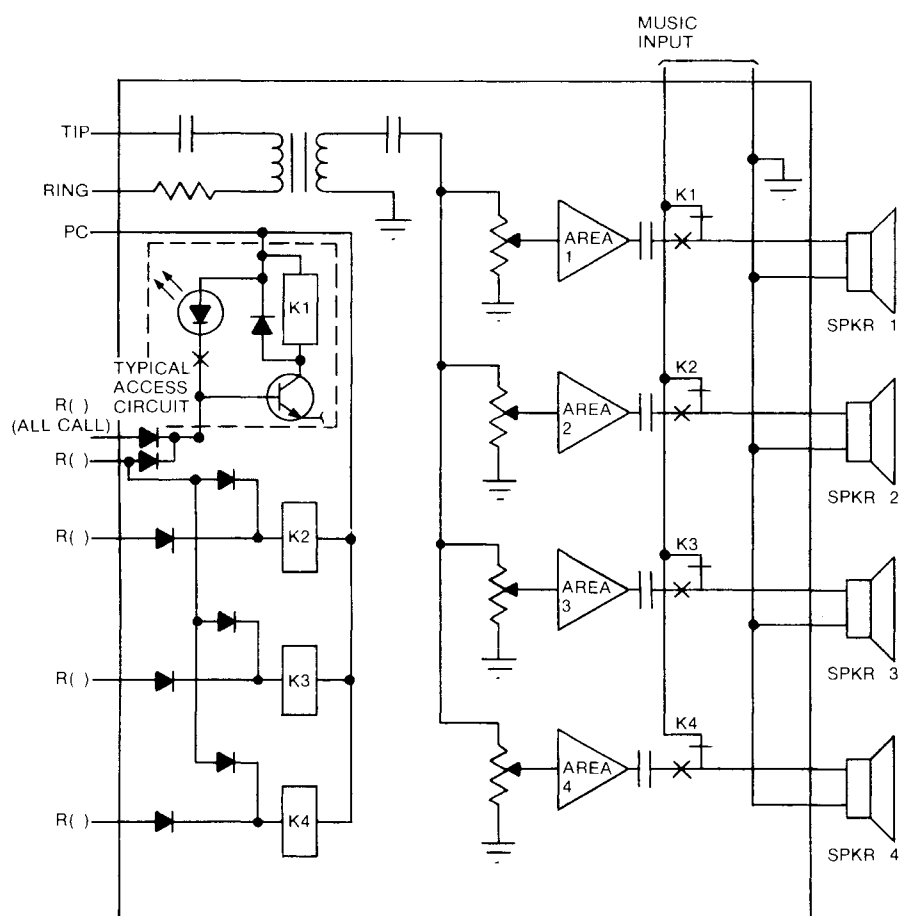


Fig. 6 — Functional Schematic of KT-364.

## PA-200A™ PABX PAGING ACCESS UNIT

### 1. GENERAL

1.01 The PA-200A is a paging access circuit for PABX systems. It is compatible with Melco's MAX Series of Communication Systems. With the PA-200A, a station user can access a paging system by dialing an assigned station number.

### 2. OPERATION

2.01 When a PABX station user wishes to place a paging call, he dials the station number assigned to paging. He hears ringback tone for one ringing period, then makes the announcement. When the message is completed he hangs up.

2.02 The PA-200A is activated by sensing ringing generator on either side of the line. Since it is referenced to ground, it will operate with most ringing systems, bridged or divided. At the completion of one ringing period, it will place a resistive bridge across the line, causing the PABX terminating circuit to cut off the ringing generator and extend the talking path through the PA-200A to the paging amplifier and speakers.

2.03 If the wiring option is used, the PA-200A will place attention tone on the speakers for one-half second immediately after the circuit is seized.

2.04 At the end of the message period the PA-200A will release the connection.

### 3. DESIGN FEATURES

3.01 The PA-200A can be mounted in a relay rack or on a backboard.

3.02 All connections are made to the circuit through an integrated 2 x 10 connecting block.

3.03 Power requirements are met by either -24V or -48V PABX battery.

3.04 Background music can be applied at the connecting block. When the PA-200A is accessed, the background music is disconnected.

3.05 Transformer coupling provides 600 ohm input and output impedance.

3.06 A one-half second call attention tone to the speakers is optional.

3.07 The paging period can be adjusted to be of 5 to 25 seconds duration.



Fig. 1

3.08 The paging period may be extended by adding a voice operated relay such as the Melco S65-1. Background music cannot be used with the S65-1.

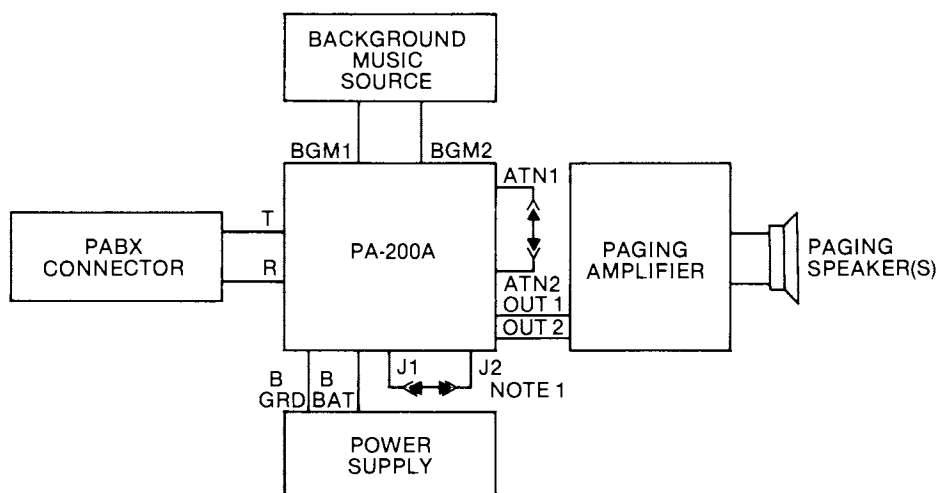
3.09 Two sets of independent relay contacts for control of auxiliary equipment are furnished.

### 4. INSTALLATION

4.01 Mount the PA-200A on a relay rack or backboard.

4.02 Make all connections on the connecting block provided as shown on the attached drawings.

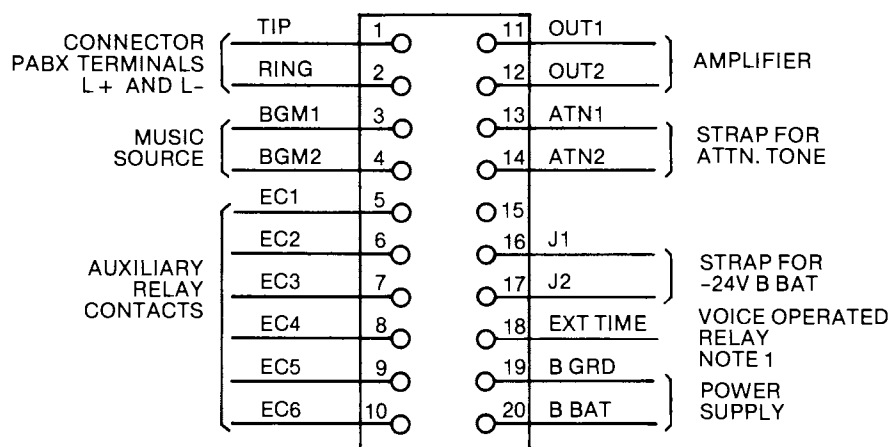
4.03 A paging amplifier with 600 ohm input impedance is recommended. Standard twisted pair wire can be used. (Amplifiers of high impedance may require shielded wire.)



NOTES:

1. CONNECT -48 OR -24V DC TO BAT TERMINAL OF PA-200A. IF -24V DC IS SELECTED, STRAP J1 AND J2.
2. FOR ATTENTION TONE, STRAP ATN1 AND ATN2.

Fig. 3 — Application Schematic of PA-200A.

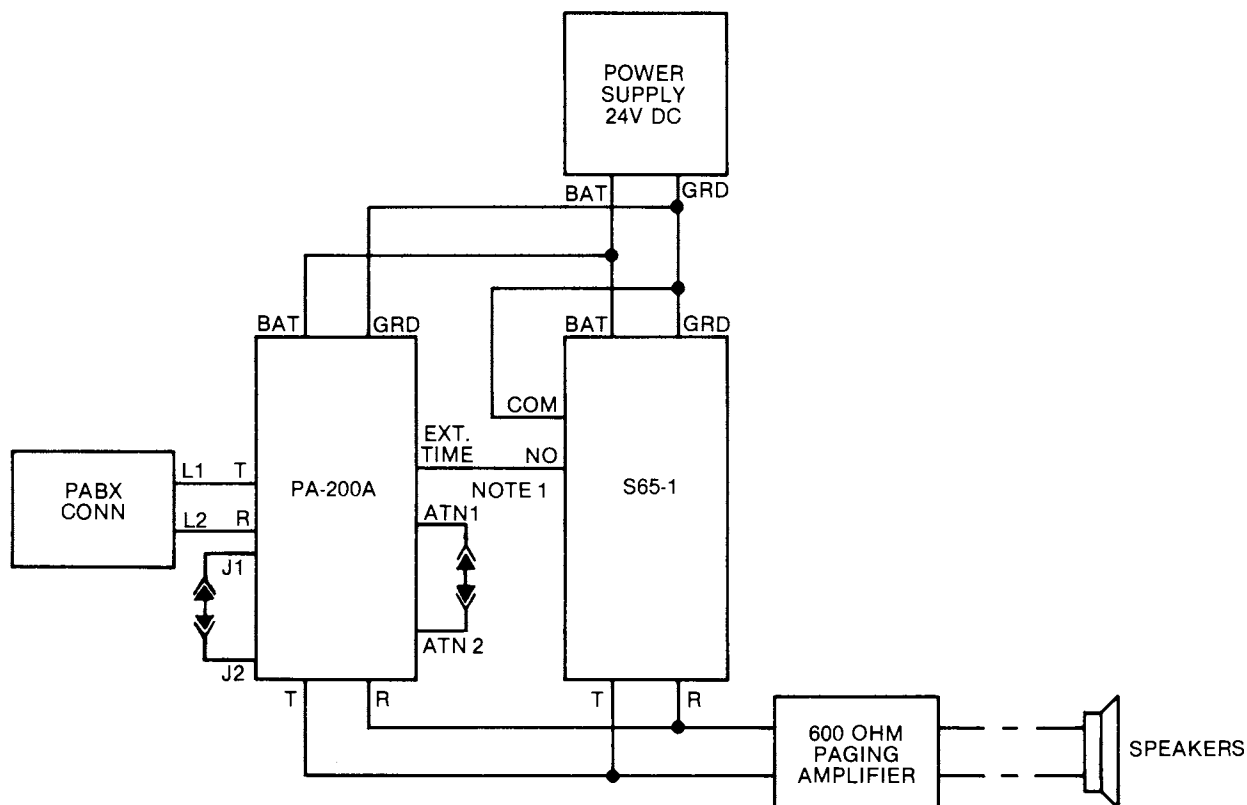


NOTES:

1. TO EXTEND PAGING TIME BEYOND 25 SECONDS, CONNECT VOICE OPERATED RELAY TO TERMINAL 18. SEE PARAGRAPH 4.10 AND FIGURE 5.

Fig. 4 — Connecting Block Assignments.





NOTES:

1. CONNECT -24V TO PA-200A, AND STRAP J1 AND J2.
2. DO NOT USE BACKGROUND MUSIC WITH THIS ARRANGEMENT.

Fig. 5 — Applications Schematic of PA-200A with 24V DC Power Supply and S65-1 Voice Operated Relay Used to Extend Paging Time.

## PA-400™ PABX FOUR-AREA PAGING ACCESS UNIT

### 1. GENERAL

1.01 The PA-400 is a four-area paging access circuit that is compatible with Melco's series of communication systems and other PABX's. With the PA-400, a tone-dialing station can dial a station number assigned to paging plus a digit for selecting one of four paging areas or all four areas at once.

### 2. DESIGN FEATURES

2.01 The PA-400 can be mounted on a relay rack or on a backboard.

2.02 All connections are made to the circuit through a connector cable and a 66 type connecting block.

2.03 Power requirements are met by either -24 volt or -50 volt PABX battery.

2.04 Background music can be applied at the connecting block. When the PA-400 is accessed, the background music for the selected area is disconnected.

2.05 Transformer coupling provides for 500 ohm input and output impedance.

2.06 A one-half second attention tone over the speakers is optional.

2.07 The paging period can be adjusted to approximately 10 to 60 seconds duration.

2.08 Quick-release of the paging connection is optional.

2.09 The paging period may be extended by adding a voice-operated relay such as the Melco S65-1. With the S65-1, -24V DC is the nominal operating voltage.

2.10 Two sets of independent relay contacts are furnished for control of auxiliary equipment.

2.11 Application has been made for FCC registration.

### 3. OPERATION

3.01 When a page is to be made, the station user dials the number assigned to paging.

The PA-400 answers the call during the first ringing cycle and places dial-tone on the line. The station now tone dials any of the four areas, 1, 2, 3 or 4, or all areas by dialing 5. After the area is selected the calling station is connected through the PA-400 to the paging equipment.

3.02 The PA-400 will release the line at the end of the selected time-out (10 to 60 seconds) and be ready to accept another page.



Fig. 1

3.03 A wiring option is provided that will allow release of the paging circuit before the end of the predetermined time-out by dialing the # key.

3.04 An additional wiring option provides for attention tone over the speakers and to the paging party for one-half second immediately after the area is selected.

### 4. INSTALLATION

4.01 Mount the PA-400 on a relay rack or a backboard.

4.02 Insert the connector of an A25B or equivalent 25-pair connector cable in the plug of the PA-400 and secure it with the clamp provided. Connect the other end of the cable to a 66-type connecting block.

4.03 A paging amplifier with 500 ohm input impedance is recommended. Standard twisted pair wire can be used. Amplifiers of high impedance may require shielded wire.

4.04 For best results, the background music source and amplifier input should be of the same impedance.

4.05 If attention tone before paging is desired, strap Pin 29 (AT1) and Pin 4 (AT2).

4.06 Connect the independent relay contacts to auxiliary equipment as required.

4.07 To extend the paging period beyond 60 seconds, see Figure 5 for the addition of a Melco S65-1 Voice Operated Relay.

## 5. MAINTENANCE

5.01 No provision is made for field adjustment or repair. If operation is not satisfactory, check all connections and fuses. Test further by substituting a unit known to be serviceable.

5.02 The PA-400 is warranted against manufacturing and material defects. If it fails from such defects within the warranty period, it will be repaired or replaced without charge. See the Melco Warranty Service Policy for warranty period and repair and return details.

## 6. SPECIFICATIONS

Input:

voltage ..... -20 to -52V DC  
current ..... 320 ma max  
ringing frequency ..... 16 to 60 Hz  
105V max

Dialing parameters (tone only):

input signal level ..... -7 to +4 dB  
bandwidth .....  $\pm 2\%$   
recognition time ..... 40 msec max  
interdigital time ..... 40 msec min  
ringing detector range ..... 70-105V max  
Input impedance ..... 500 ohms  
Output impedance ..... 500 ohms  
Frequency response ..... 300 to 3 kHz

Call attention tone:

frequency ..... 500 Hz  $\pm 10\%$   
duration .....  $\frac{1}{2}$  sec nom

Paging period ..... 10 to 60 sec  
adjustable

Mounting ..... relay rack or backboard

Connections ..... 25-pair connector cable

Operating temperature ..... 0° to 50° C  
32° to 122° F

Operating humidity ..... 0 to 95%  
noncondensing

Dimensions ..... 10.5" x 8.5" x 1.9"

Housing ..... epoxy coated aluminum

## 7. ORDERING GUIDE

7.01 Order as follows:

(QTY) PA-400 PABX PAGING ACCESS UNIT.

optional:

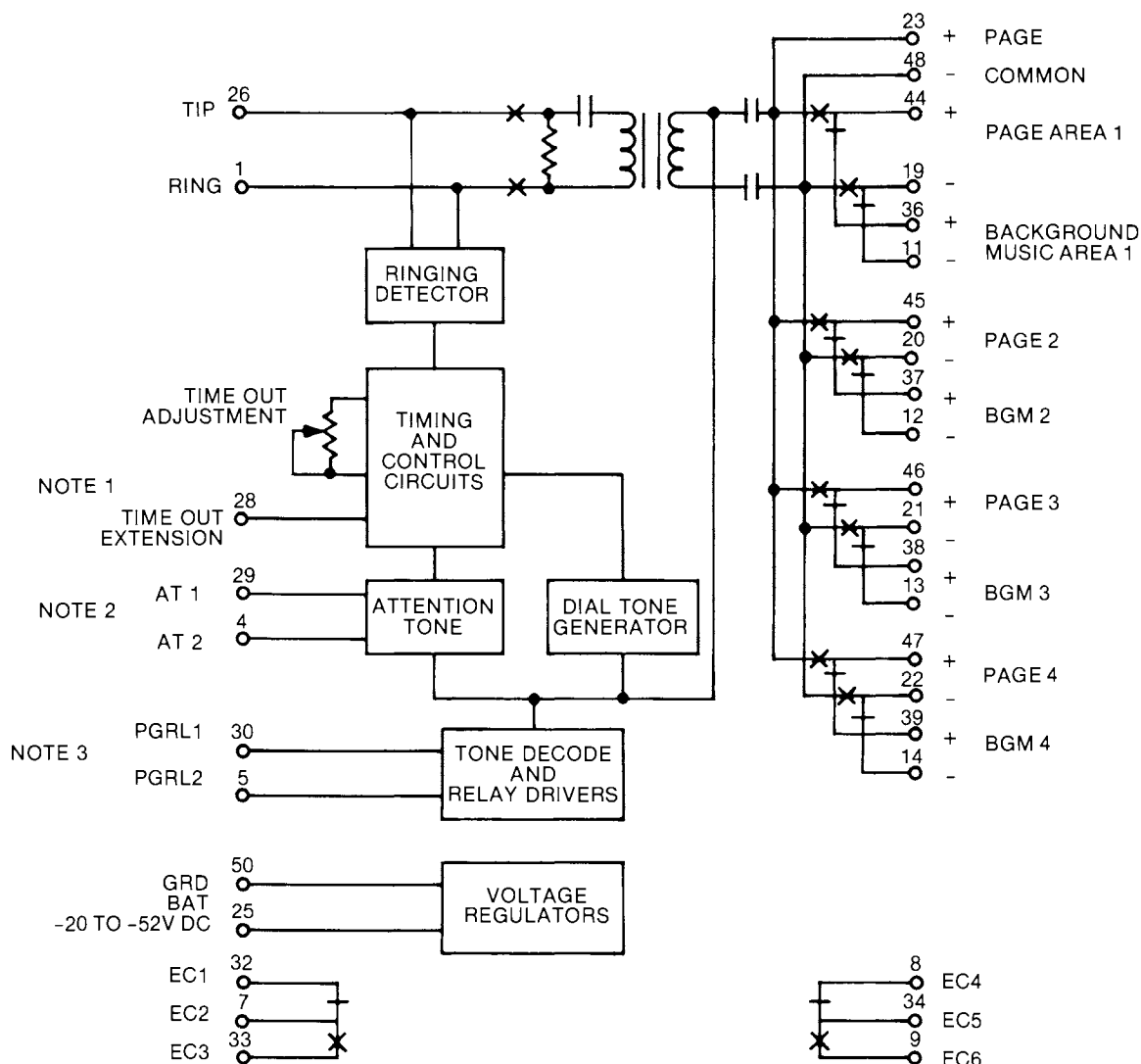
(QTY) S65-1 VOICE OPERATED RELAY

from your supplier or distributor.

7.02 For information or assistance with these or any Melco products, call or write:

MELCO LABS, INC.  
14408 N.E. 20th Street  
Bellevue, WA 98007  
(206) 643-3400  
TWX: 910-443-3040





**NOTES:**

1. CONNECT TO GROUND THROUGH A VOICE OPERATED RELAY TO EXTEND TIME OUT PERIOD.
2. STRAP TOGETHER TO ENABLE ATTENTION TONE.
3. STRAP TOGETHER TO ALLOW RELEASE OF THE PAGING CIRCUIT BY DIALING THE # KEY.

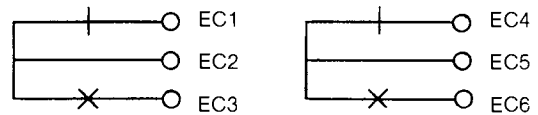
Fig. 2 — Functional Schematic of PA-400.

NOTES:

		CONN BLOCK		CONNECTOR
1	TIP	1	w-bl	26
	RING	2	bl-w	1
		3	w-o	27
2	TIME OUT EXT	4	o-w	2
		5	w-g	28
		6	g-w	3
3	AT 1	7	w-br	29
	AT 2	8	br-w	4
4	PGRL1	9	w-s	30
	PGRL2	10	s-w	5
5		11	r-bl	31
		12	bl-r	6
	EC1	13	r-o	32
	EC2	14	o-r	7
	EC3	15	r-g	33
	EC4	16	g-r	8
	EC5	17	r-br	34
	EC6	18	br-r	9
		19	r-s	35
		20	s-r	10
6	BGM1 +	21	bk-bl	36
	BGM1 -	22	bl-bk	11
	BGM2 +	23	bk-o	37
	BGM2 -	24	o-bk	12
	BGM3 +	25	bk-g	38
	BGM3 -	26	g-bk	13
	BGM4 +	27	bk-br	39
	BGM4 -	28	br-bk	14
		29	bk-s	40
		30	s-bk	15
		31	y-bl	41
		32	bl-y	16
		33	y-o	42
		34	o-y	17
		35	y-g	43
		36	g-y	18
7	PAGE 1 +	37	y-br	44
	PAGE 1 -	38	br-y	19
	PAGE 2 +	39	y-s	45
	PAGE 2 -	40	s-y	20
	PAGE 3 +	41	v-bl	46
	PAGE 3 -	42	bl-v	21
	PAGE 4 +	43	v-o	47
	PAGE 4 -	44	o-v	22
8	PAGE COM -	45	v-g	48
	PAGE COM +	46	g-v	23
		47	v-br	49
9		48	br-v	24
	GRD +	49	v-s	50
	BAT -	50	s-v	25

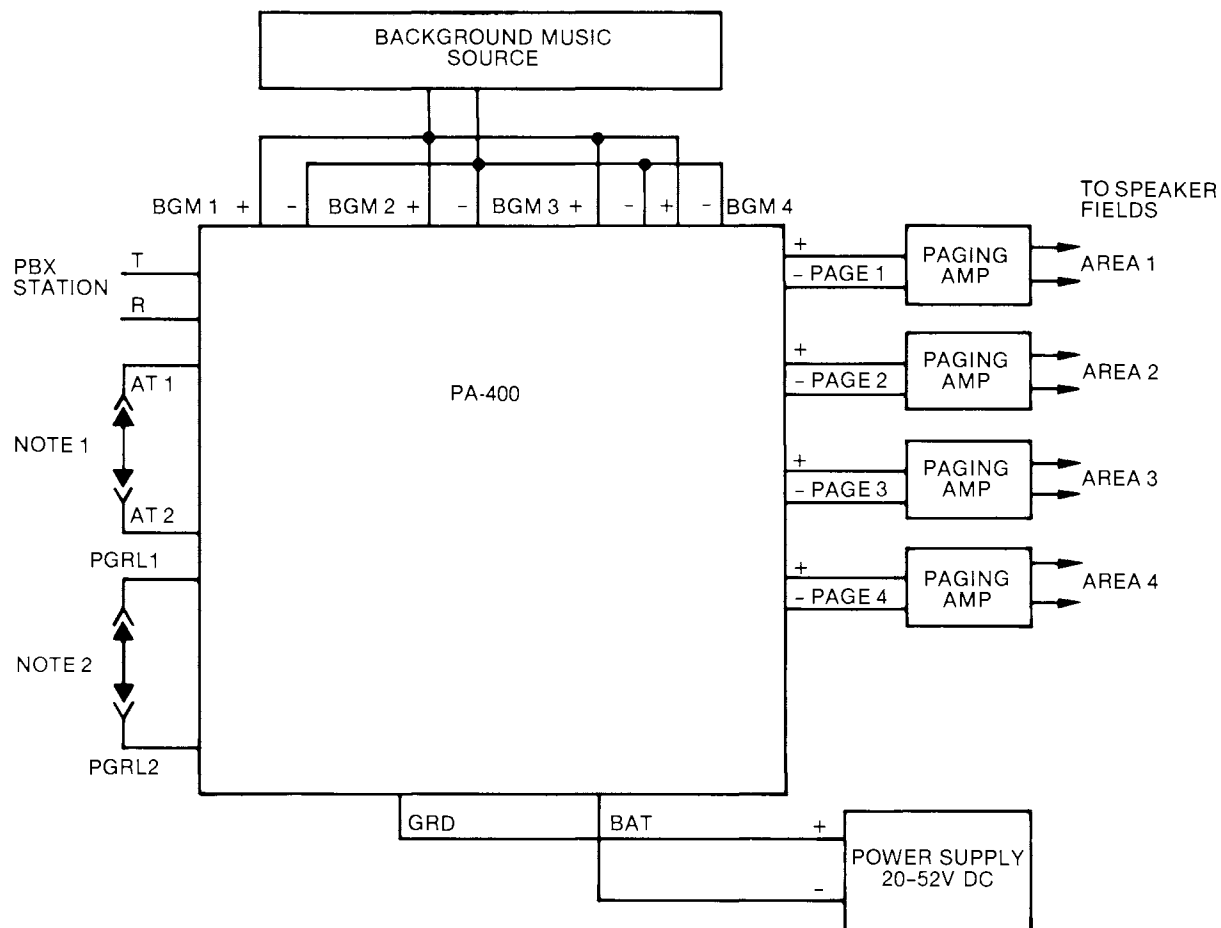
NOTES:

1. TIP AND RING INPUT FROM PBX STATION.
2. EXTENDS TIME OUT WHILE PULLED TO GRD (VOX INPUT).
3. STRAP FOR ATTENTION TONE.
4. STRAP TO RELEASE PAGING CIRCUIT BY DIALING THE # KEY.
5. EXTRA RELAY CONTACTS ACTIVATED WHILE UNIT IS SIEZED.



6. BACKGROUND MUSIC INPUTS FOR EACH AREA.
7. PAGING OUTPUTS.
8. VOICE OPERATED RELAY OUTPUT TO S65-1.
9. POWER INTO UNIT IS -20 TO -52V DC.

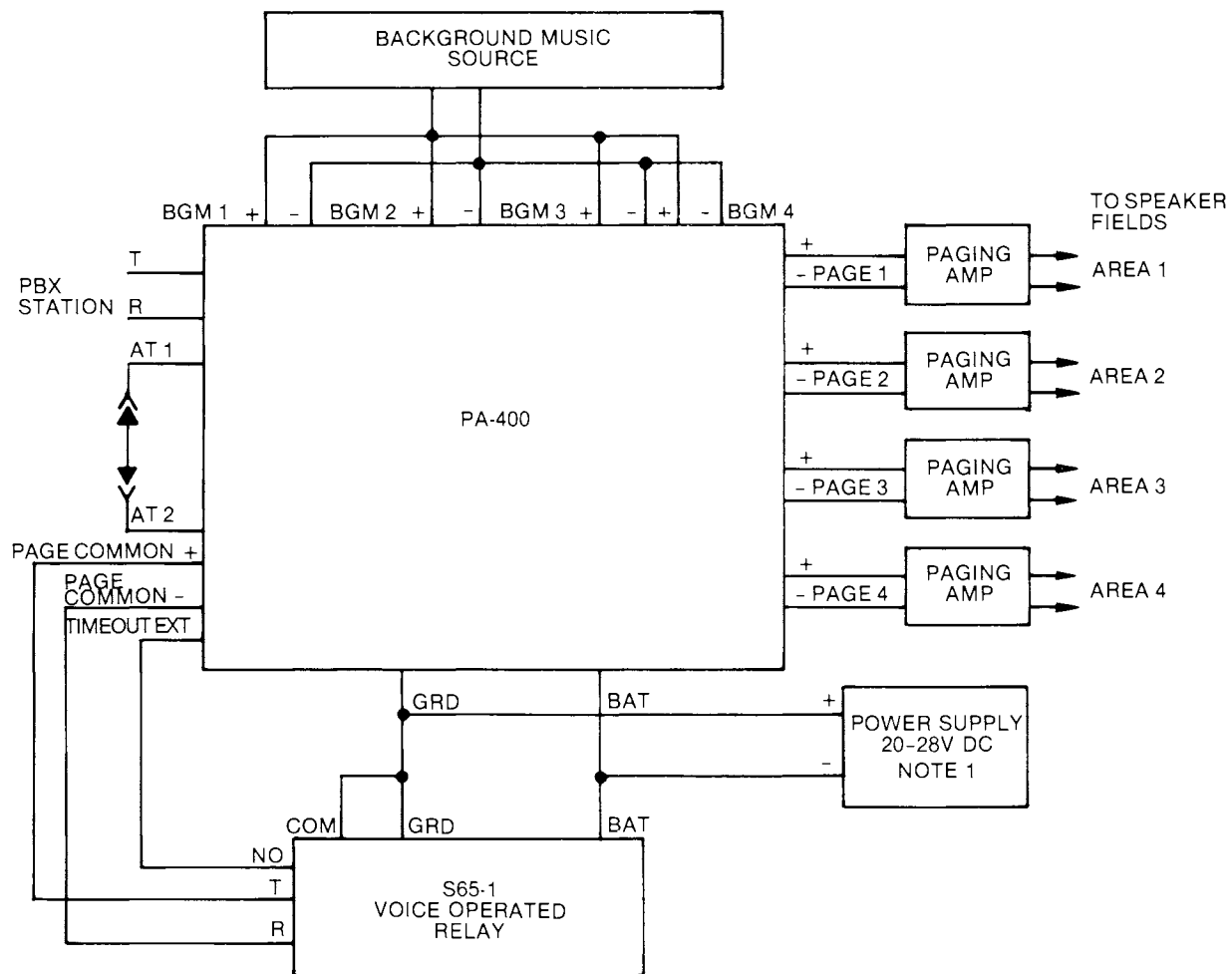
Fig. 3 — PA-400 Cable Connector Assignments.



**NOTES:**

1. STRAP AT1 TO AT2 TO ADD ATTENTION TONE.
2. STRAP PGRL1 TO PGRL2 TO RELEASE PAGING CIRCUIT BEFORE TIMEOUT BY DIALING THE # KEY.

Fig. 4 — Application Schematic for PA-400.



**NOTES:**

1. VOLTAGE MUST NOT EXCEED -28V DC WHEN S65-1 IS USED.

Fig. 5 — Application Schematic for PA-400 and S65-1 Voice Operated Relay Used to Extend Paging Time.