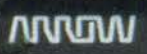


ARROW ELECTRONICS, INC.  
ELECTRONICS DISTRIBUTION DIVISION



SHIPPING/RECEIVING

# Off-Premise Equipment





# Melco meets the special requirements of your off-premise customers.

Melco's complete line of off-premise equipment helps you solve the special problems associated with off-premise installations.

For customers with off-premise key system extensions, offer Melco's M-410 Signaling Unit series, the S-71 Ringing Adapter, or the M-205 Ringdown Circuit. Melco's M-410 series provide lamp signaling at both the main and off-premise extensions allowing key system users to easily identify the status of a C.O. line. Problems caused by a lack of visual signal controls are eliminated, allowing calls to be placed, received and handled more efficiently. Customers with off-premise key system intercom stations can reduce wiring costs with Melco's S-71, which provides bridged ringing to the extensions without adding an extra cable pair. And, the M-205, which provides a direct line between two stations, is ideal for applications in which quick signaling between two extensions is necessary and where mixing calls with normal intercom traffic is undesirable.

For special applications which require an off-hook signal indication, install Melco's S-64 Loop Detector series or the M-62 A-A1 Line Adapter. All provide A-A1 control and can be used to indicate line seizure for key telephone equipment, busy lamp fields, or lamp circuits. They are also ideal for activating traffic measuring, message recording, or other equipment which requires an off-hook indication.

Melco makes models of off-premise equipment to accommodate a wide variety of installation requirements. Each is designed to install quickly and easily, requiring little or no modification to lines and minimal wiring and equipment costs. All are FCC registered—the M-410 series registration number is AQT9PZ-69477-KX-N and the S-71 registration number is AQT9PZ-69999-KX-N. The S-64 series is registered under number AQT9PZ-69859-KX-N and the M-62 under number AQT9PZ-69492-KX-N. (The M-205 does not require FCC registration.)

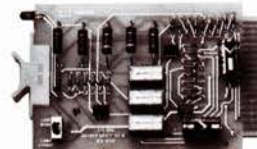
## Description

### M-410 Series Off-Premise Signaling Units

Melco's M-410 and M410-1A Off-Premise Signaling Units provide lamp supervision to off-premise extensions of 1A2 type key systems. One unit at both the main and off-premise locations allows for A-lead and lamp signaling at both locations. When either location places or receives a call on the C.O. line, lamps at both locations will light steadily. Either location can place a call on hold or release the hold.

The M-410 has an option switch which provides for either wink or steady lamp on hold. In addition to the central office pair, a control cable pair between the main and off-premise location is required. The M410-1A is designed so that additional cable pairs are not required between locations, making it especially desirable for applications with more than one off-premise extension.

The M-410 mounts in any panel appropriate for a 400 type line card. The M410-1A is contained in a high-impact, plastic housing for mounting in a relay rack, apparatus cabinet, or on a backboard.



### S-71 Off-Premise Ringing Adapter

Melco's S-71 Off-Premise Ringing Adapter provides a convenient method for ringing an off-premise extension of a key system intercom without an additional pair of wires. The off-premise telephone can be either a main intercom station or an extension of one. The station is dialed in the same manner as is any other intercom station.



### M-205 Ringdown Circuit

Melco's M-205 Ringdown Circuit provides for a direct line between a main and off-premise location. It is especially useful for key system applications with one or more off-premise stations which may or may not have other lines on the key system. When one station lifts the receiver and presses the assigned pickup key, the other station will ring automatically. At the main location, the M-205 provides a flashing lamp when being called and a steady lamp when the call is answered. Power for talking, ringing, and lamp signaling is furnished by the key system power supply.



The M-205 may be mounted in an apparatus cabinet, in a relay rack, or on a backboard and connects to a 25-pair connector cable. Only one cable pair is required to the off-premise location.

### S-64 Series Loop Detectors

Melco's S64-1 and S64-5RA are multi-application loop (current) detectors which provide an indication of current flow in a circuit. Both provide A-A1 control which may be used as input to a key system line card to indicate that the line has been seized, or to an external relay to activate auxiliary equipment.

The S64-1 has one loop sensing circuit which detects loop current of over 4 milliamperes as an off-hook condition. The unit can be installed anywhere the line appears and mounts conveniently on a backboard.



The S64-5RA has individual loop sensing circuits for five lines and is designed with relay contacts for switching of DC and AC. It is contained in an aluminum housing which mounts on a backboard, in a relay rack, or in an apparatus cabinet, and uses a 25-pair cable for connections.





## M-62 A-A1 Line Adapter

Melco's M-62 A-A1 Line Adapter provides an additional switching function from the lineswitch of any standard telephone. It can be used on single-line instruments for key system applications, for station busy lamp operation, or any other off-hook indication. The tiny M-62 is designed to install inside the telephone instrument. It is ideal for single-line telephone extensions (including decorator phones), or multi-line telephone extensions of key systems.



## Design Features

FEATURES	M-410	M410-1A	S-71	M-205	S64-1	S64-5RA	M-62
Provides visual signaling control	•	•		•			
Causes lamps to light when either the main or off-premise location places or receives call	•	•		•			
Allows a hold to be placed or released from either main or off-premise locations	•	•					
Provides a switch option for lamp wink when a line is on hold	•						
Has an LED on the unit which lights when the C.O. line is busy	•	•					
Provides audible signaling control			•	•			
Can be used to provide A-A1 control					•	•	•
Can be used to activate auxiliary equipment					•	•	•
Detects loop currents over 2 ma as an off-hook signal by providing a relay contact closure						•	
Detects loop currents over 4 ma as an off-hook signal by providing an output ground					•		
Provides an additional switching function from the lineswitch of the telephone							•
Does not require an additional cable pair between locations for special functions		•	•		•	•	
Works with key system telephones	•	•	•	•	•	•	•
Works with single-line telephones			•	•	•	•	•
Circuits are connected in series with the line			•		•	•	•
Circuits are not polarity sensitive and add less than 0.5 dB loss to the transmission path			•		•	•	•
Does not require on-site adjustment or calibration	•	•	•	•	•	•	•

## General Specifications

### M-410 and M410-1A

Max C.O. loop resistance ..... 1800 ohms  
Operating voltage ..... -24V DC nom  
Operating current  
M-410 ..... 105 to 150 ma operated  
0 amp idle  
M410-1A ..... 20 to 75 ma operated  
10 ma idle

#### Dimensions

M-410 ..... 3.5" x 5.3"  
M410-1A ..... 7.0" x 3.5" x 1.5"

#### Weights

M-410 ..... 4 oz  
M410-1A ..... 10 oz

### S-71

Operating voltage ..... -18 to -24V DC  
-24V DC nom  
Relay contact ratings ..... 105V AC, 0.5 amp  
Dimensions ..... 5.25" x 3.12" x 1.0"  
Weight ..... 4 oz

### M-205

Operating voltage ..... -18 to -28V DC  
-24V DC nom  
Operating current  
-24V DC per circuit ..... 20 ma idle  $\pm$  25%  
380 ma operated  $\pm$  25%  
Lamp supply ..... 10V AC, 60 Hz  
Loop limits  
local ..... 750 ohms  
remote ..... 2000 ohms  
Relay contact ratings ..... 1 amp at 10V AC  
0.5 amp at 105V AC  
1 amp at 28V DC  
Dimensions ..... 7.0" x 4.8" x 1.5"  
Weight ..... 1 lb

### S64-1 and S64-5RA

Operating voltage range  
S64-1 ..... -24V nom  
S64-5RA ..... -24V nom  
or -50V nom  
Off-hook detection current  
S64-1 ..... 4 ma DC  
S64-5RA ..... 2 ma DC  
Operating current  
S64-1:  
-24V DC per circuit ..... 0 ma idle  
0.2 ma operated  $\pm$  10%

S64-5RA:  
-24V DC ..... 20 ma nom idle  
190 ma nom operated  
-50V DC ..... 36 ma nom idle  
190 ma nom operated

#### A lead voltage

S64-1 ..... -24V DC  
(-28V DC max)

#### A lead current

S64-1 ..... 100 ma DC max  
(-28V DC max)

#### Relay contact rating

S64-5RA:  
(RC( )A, B, C) ..... 1 amp at 24V DC or  
0.5 amp at 100V AC

#### Allowable frequency range

bridged ringing ..... 30 Hz to 60 Hz  
125V max  
ring side to ground ..... 20 Hz to 60 Hz  
125V max

#### Dimensions

S64-1 ..... 5.25" x 3.12" x 1.0"  
S64-5RA ..... 1.5" x 5.0" x 7.0"

#### Weights

S64-1 ..... 4 oz  
S64-5RA ..... 17 oz

### M-62

A terminal open  
circuit voltage ..... -28V DC max  
A terminal closed  
circuit current ..... 100 ma  
Dimensions ..... 0.4" x 0.9" x 1.3"  
Weight ..... 1 oz

## How to Order

Order Melco off-premise equipment through your local supplier or distributor. For more information, please contact Melco.



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



## M-410™ OFF-PREMISE SIGNALING — KTU

## 1. GENERAL

1.01 The M-410 provides for audible and visual signaling at a second location of a central office line terminating on a key system. In addition to the central office cable pair, one M-410 at each location and a control cable pair between them will provide for A lead and lamp functions at the second location. Either location can pick up a call and the lamp at both locations will light steadily. Either location can place a call on hold or release the hold. Either wink or steady lamp on hold is available with a switch option.

## 2. DESIGN FEATURES

2.01 The printed circuit board of the M-410 mounts in a Western Electric 501, 502, 550 or 551 KSU; a 583 or 584 panel; a 259 KTU or any panel wired for a 400 type line card.

2.02 Equipment and connections required to extend a central office line to an off-premise location are shown in Figure 2. Key telephone equipment is required at both locations.

2.03 Wired as shown in Figure 2, the equipment will provide calling, answer and hold lamp signals. A switch option provides for either wink or steady lamp on hold.

### 3. MAINTENANCE

**3.01** No provision is made for field adjustment or repair. If the M-410 fails to operate, check all connections. The unit is warranted against material and manufacturing defects for 90 days. If it fails within that time it will be repaired or replaced at no charge. See the Melco Warranty Service Policy.

#### 4. SPECIFICATIONS

Max loop .....	1800 ohms
Max AS lead .....	1800 ohms
Max LS lead .....	1800 ohms
Operating Voltage .....	-18 to -28V DC
	-24V DC nom

Current ..... 105 to 150 ma  
operated, 0 amp idle

Lamp voltage ..... 10V AC

Current .....1 amp resistive or ten 51A lamps

Operating humidity ..... 0 to 95%

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

## 5. ORDERING GUIDE

5.01 Order the M-410 as follows:

(QTY) M-410 OFF-PREMISE SIGNALLING-KTU

from your local supplier or distributor.

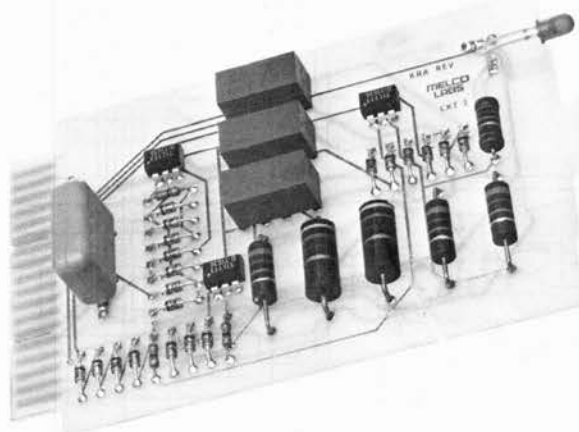


Fig. 1

5.02 Further assistance and information on the M-410 or any Melco product is available from:

**MELCO LABS**  
14408 N.E. 20th St.  
P.O. Box 4026  
Bellevue, WA 98009  
(206) 643-3400

## 6. FCC REQUIREMENTS

6.01 This auxiliary Off-Premise Signaling has received an FCC Type KX registration; it is designed to be used with all FCC KN registered type 1A2 Key Telephone Sets, such as those marketed by: Western Electric, GTE Automatic Electric, Stromberg-Carlson, ITT, Northern Telecom, etc. Such installations may be made by Melco Labs, and authorized agents of Melco labs, equipment manufacturers, telephone companies, registered telephone refurbishers, and those qualified for installation of KN or PN systems under FCC Rules, Section 68.215.

6.02 In accordance with FCC Rules and with applicable tariffs, the Off-Premise Signaling may only be installed with authorization of the owner of the host system.

6.03 The KX Registration Number AQT9PZ-69477-KX-N, will be listed in the affidavits filed with the telephone company; it will also be recorded in the system log kept by installation and maintenance personnel. The local telephone company is to be notified of the FCC Registration Number when the Off-Premise Signaling is installed.

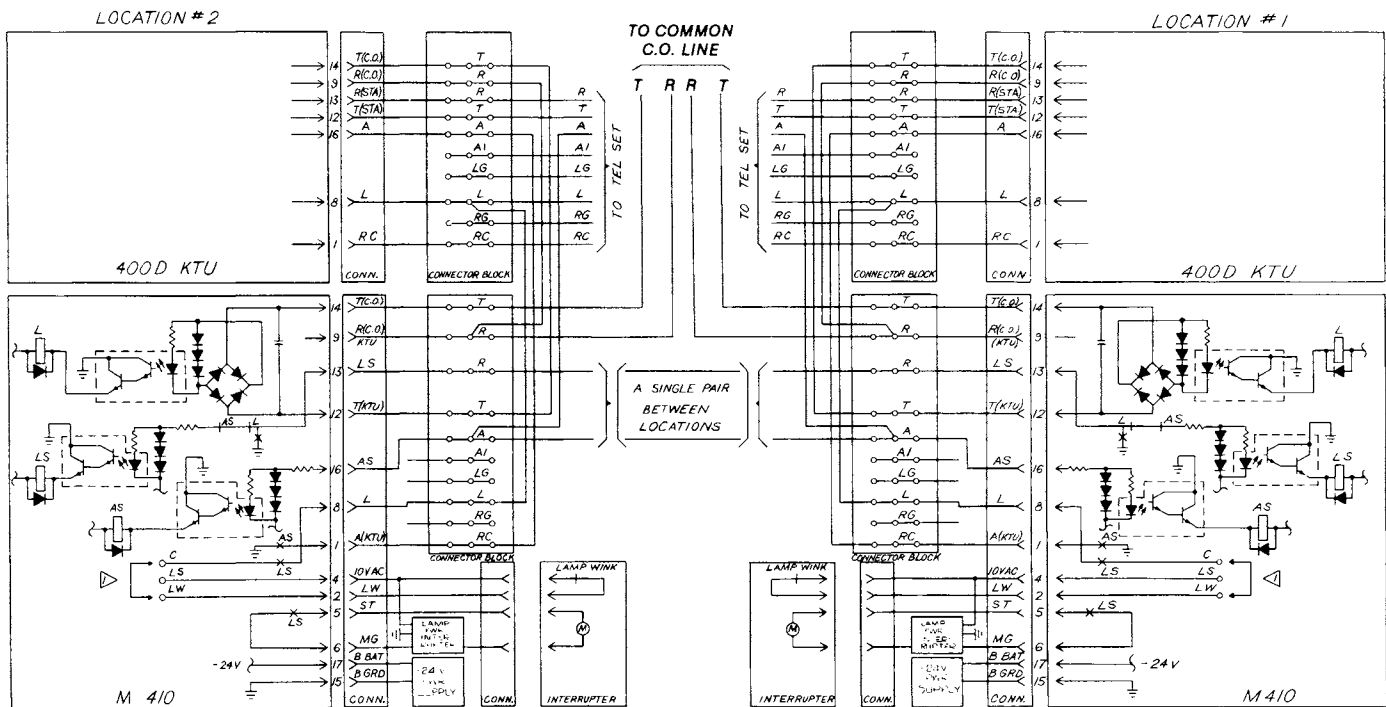


Fig. 2 — M-410 Wiring and Connections.

## 1. GENERAL

## 2. DESIGN FEATURES

- provides visual signal controls.
- allows a hold to be placed or released at any appearance of the line.
- does not require on-site adjustment or calibration.
- does not require an additional cable pair between locations.

3.01 Any location can pick up a call and the lamp at all locations will light steadily. If one location places a call on hold, the lamp at the other locations will light steadily. Standard lamp signals will be provided to all locations for incoming calls.

## 4. INSTALLATION

**4.02** Equipment and connections required to extend a central office line to an off-premise location are shown in Fig. 3.

**NOTE:** If equipment inserted in the line does not provide a continuous DC path between primary and remote stations, the M410-1A cannot be used.

## 5. SPECIFICATIONS

Mounting .....6.5" mounting centers



## 6. MAINTENANCE

6.01 No provisions are made for field maintenance or repair. If defective, return the unit to supplier.



## 7. ORDERING INFORMATION

7.01 Order from your local supplier or distributor.

Specify order as follows:

(QTY) M410-1A OFF-PREMISE SIGNALING  
— KTU

7.02 Further information and assistance for the M410-1A or any other Melco product is available from:

MELCO LABS  
14408 N.E. 20th St.  
P.O. Box 4026  
Bellevue, WA 98009  
(206) 643-3400

## 8. FCC REQUIREMENTS

8.01 This auxiliary Off-Premise Signaling has received an FCC Type KX registration; it is

designed to be used with all FCC KN registered type 1A2 Key Telephone Sets, such as those marketed by: Western Electric, GTE Automatic Electric, Stromberg-Carlson, ITT, Northern Telecom, etc. Such installations may be made by Melco Labs, and authorized agents of Melco Labs, equipment manufacturers, telephone companies, registered telephone refurbishers, and those qualified for installation of KN or PN systems under FCC Rules, Section 68.215.

8.02 In accordance with FCC Rules and with applicable tariffs, the Off-Premise Signaling may only be installed with authorization of the owner of the host system.

8.03 The KX Registration Number AQT9PZ-69477-KX-N, will be listed in the affidavits filed with the telephone company; it will also be recorded in the system log kept by installation and maintenance personnel. The local telephone company is to be notified of the FCC Registration Number when the Off-Premise Signaling is installed.

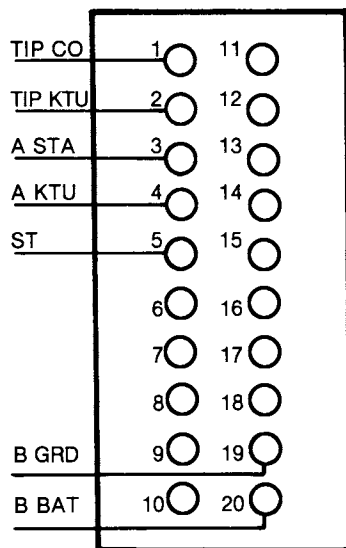


Fig. 2 — Connecting Block.

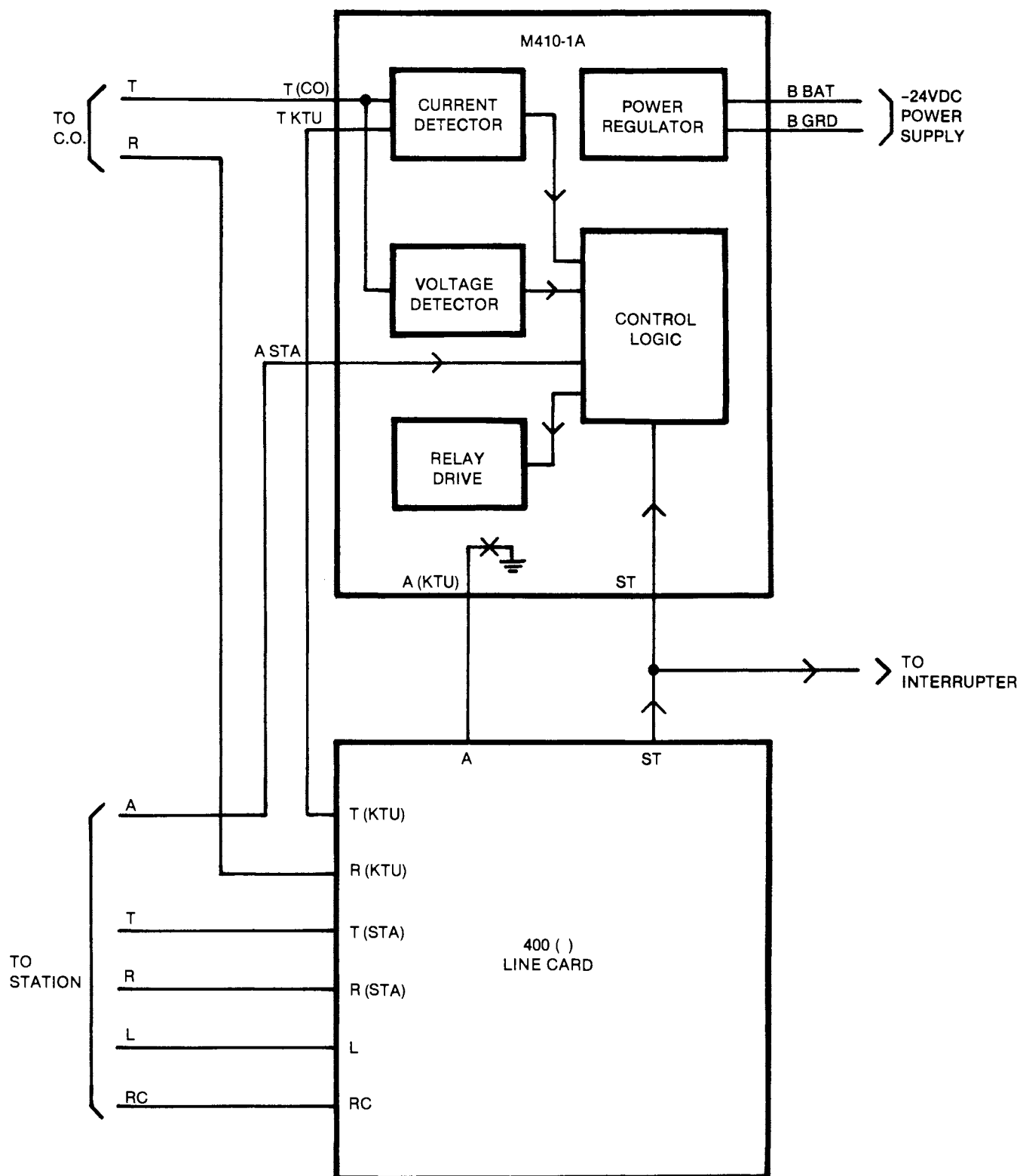


Fig. 3 — Block Diagram of M410-1A.



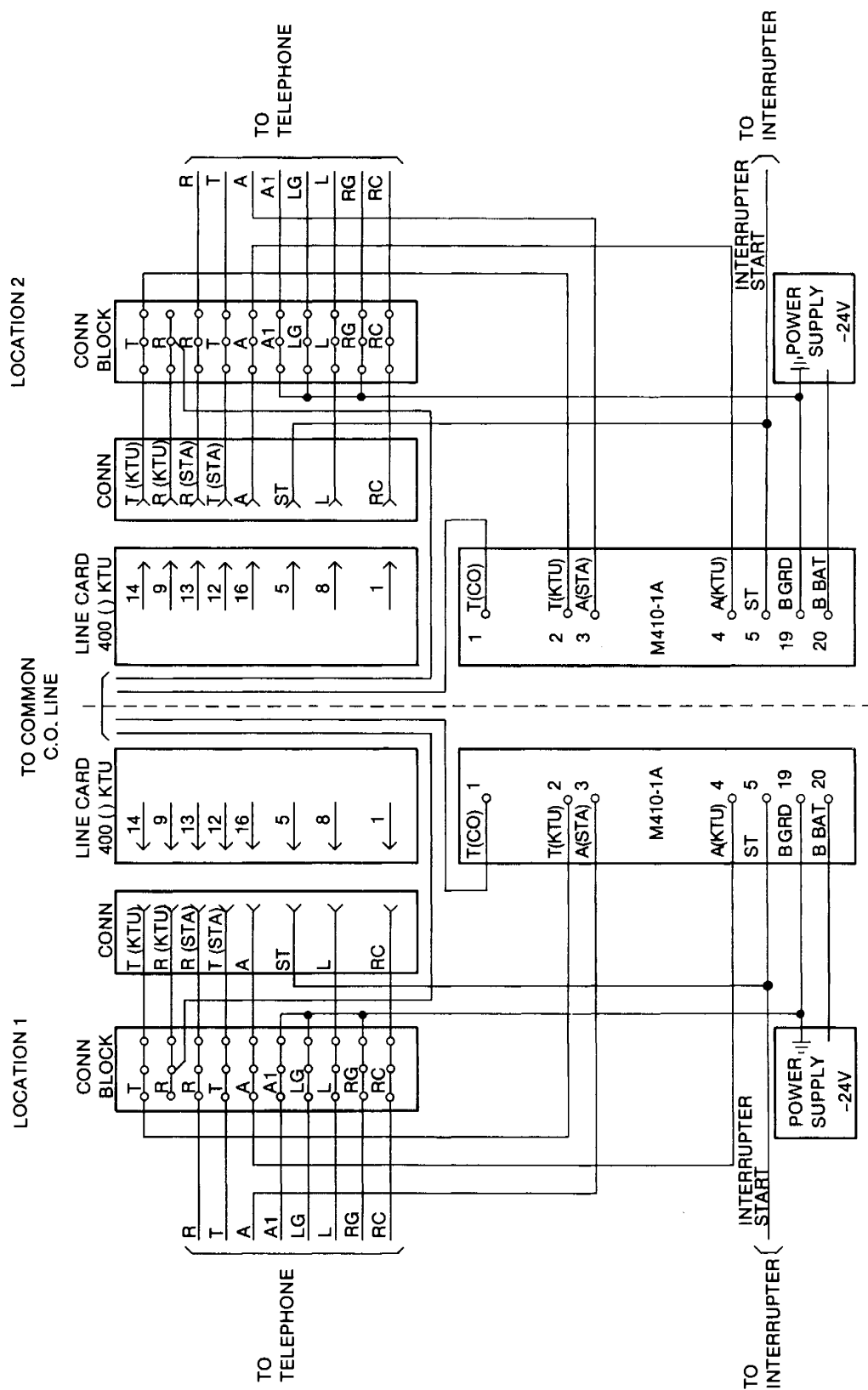


Fig. 4 — Interconnection of M410-1A to Line Card for A Lead and Lamp Operation.

## M-62™ UNIT CONTROL

### 1. GENERAL

- 1.01 This instruction describes the M-62 Unit Control and provides information on its installation and maintenance.
- 1.02 The M-62 Unit Control provides an additional switching function from the lineswitch of any standard telephone. It can be used for key system "A" relay control, stations busy lamp operation or any other off-hook indication.
- 1.03 This device has received Registration Number AQT9PZ-69492-KX-N under FCC Rules and Regulations, Part 68. Ringer Equivalence is 0.0B.

### 2. DESIGN FEATURES

- 2.01 The M-62 is a solid state device. It has no relays. It is contained inside the instrument and requires no mounting.
- 2.02 Tip and Ring, brought out from the M-62 on wire leads, are not polarity sensitive. They are connected across the line to operate the solid state switch within the M-62 unit.
- 2.03 When the instrument goes off-hook, ground is switched from terminal A1 to terminal A to provide an operating ground for an auxiliary lineswitch function.
- 2.04 The M-62 switch is designed for dc loads only.

### 3. INSTALLATION

- 3.01 Remove the instrument cover and connect the Tip and Ring leads of the M-62 to the Tip and Ring of the instrument. Either wire on either lead will be satisfactory, but the connections must be on the telephone side of the lineswitch. See Figure 2.
- 3.02 Connect the A1 terminal of the M-62 to ground of power supply.

- 3.03 Connect the A terminal of the device required to furnish an additional lineswitch function.
- 3.04 Do not test the M-62 switching function with a voltmeter.
- 3.05 Do not put other than direct current load on the M-62.



Fig. 1 — M-62 Actual Size.

### 4. MAINTENANCE

- 4.01 Do not attempt field repair of the M-62. The M-62 is warranted against manufacturing and material defects. If it becomes defective within the warranty period, it will be replaced without charge. See the Melco Warranty Service Policy for return and replacement details.



## 5. SPECIFICATIONS

"A" terminal open  
circuit voltage ..... - 28 Vdc max.  
"A" terminal closed  
circuit current ..... 100 ma  
Switching speed ..... 100 msec

6.02 Further information or technical assistance  
on the M-62 or any Melco product is  
available from:

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

## 6. ORDERING

6.01 Order as follows:  
(QTY) 120022 M-62 UNIT CONTROL  
from your local supplier or distributor.

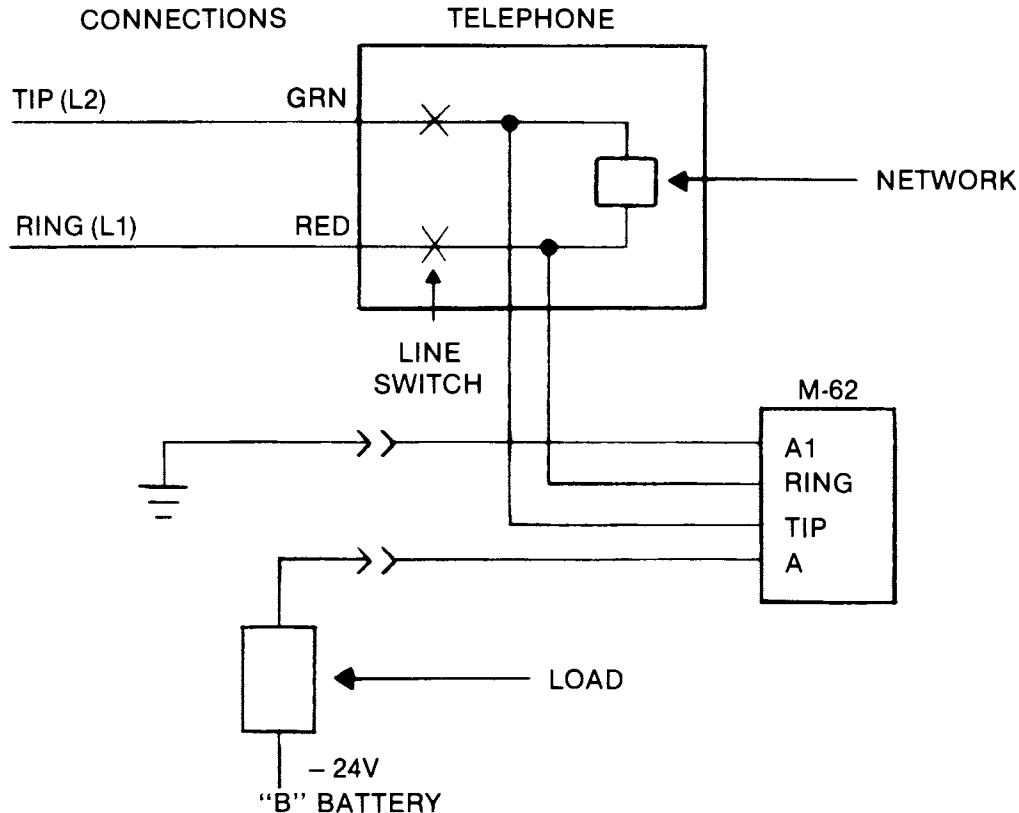


Fig. 2 — Application Schematic, M-62

## **FCC REQUIREMENTS**

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

Upon installation, the FCC Registration Number AQT9PZ-69492-KX-N must be reported to the telephone company and recorded in logs kept by the installation and maintenance personnel.

This unit must be installed by grantee, grantee's authorized agent, equipment manufacturers, telephone companies, or agents authorized under Part 68, of the FCC Rules and Regulations.

Installation of this device can only be made with the permission of the owner of the host equipment.

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.

490508

M-62

2/81



## 1. GENERAL

1.02 This device has received Registration Number AQT9PZ-69859-KX-N under Part 68 of FCC Rules and Regulations. Ringer equivalence is 0.0B.

2.01 The S64-1 is connected in series with the line. It will detect loop current of over 4 milliamperes as an off-hook condition and provides an output ground.

2.03 The S64-1 is not polarity sensitive and adds no more than 0.5dB loss to the transmission path.

2.05 The S64-1 will withstand voltages normally present on a central office line. It will not operate from ringing generator if the generator is above 30 Hertz or its path is from the ring side of the line, through the ringer to ground.

### 3. INSTALLATION

shown in Figure 4. Replace the cover.

#### 4. MAINTENANCE

**MELCO**  
**S64-1**  
**UNIT CONTROL**  
**A-A1 Line Adapter**

COMPASS  
LINE  
CKT

S64-1

TIP T (IN) T (OUT) R (OUT)

RING R (IN) A (OUTPUT)

POWER SUPPLY BAT GRD

BAT GRD

TO AUX EQUIP

28VDC MAX

280 OHMS MIN

470120

12-78

4.02 The S64-1 is warranted against manufacturing and material defects. If it becomes defective within the warranty period, it will be repaired or replaced at no charge. See the Melco Warranty Service Policy for return and repair details.

Detection power (CO) .....	.50mw
Operating voltage .....	-18 to -28V DC
	-24V DC nom
Sensitivity .....	4mA DC

A lead voltage  
(external supply) ..... -28V DC max  
A lead current ..... 100 mA DC max  
Transmission loss ..... 0.5 dB max  
Allowable frequency range:  
bridged ringing ..... 30 Hz to 60 Hz, 125V max  
ring side to ground ..... 20 Hz to 60 Hz, 125V max  
Detector breakdown  
voltage ..... 1500V DC, tip or ring  
to ground  
Longitudinal balance ..... better than -60dB  
Loop limit ..... 1800 ohms  
On hook delay ..... 100 msec  $\pm$  10%  
Off hook delay ..... 100 msec  $\pm$  10%  
Dimensions ..... 5.25" x 3.13" x 1.0"  
4.75" mtg. ctrs.  
Mounting ..... 1 ckt/plastic housing  
on rack or backboard

Operating temperature ..... 0° to 50°C  
32° to 122°F  
Operating humidity ..... 0 to 95%  
(noncondensing)  
Weight unpacked ..... 3.5 oz

## 6. ORDERING

- 6.01 Order as follows:  
(QTY) 120092 S64-1 LOOP DETECTOR  
from your local supplier or distributor.
- 6.02 For additional information and assistance  
with the S64-1 or any Melco product, call or  
write:

MELCO  
P.O. Box 6909  
Bellevue, WA 98008-0909  
(206) 462-6700  
TWX: 910-443-3040

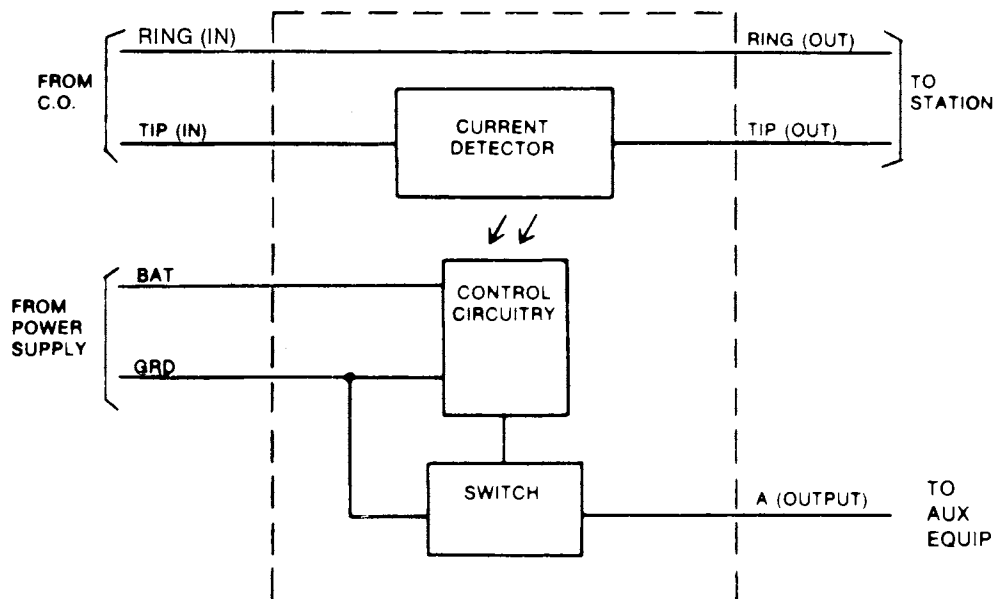


Fig. 2 — Condensed Functional Schematic.



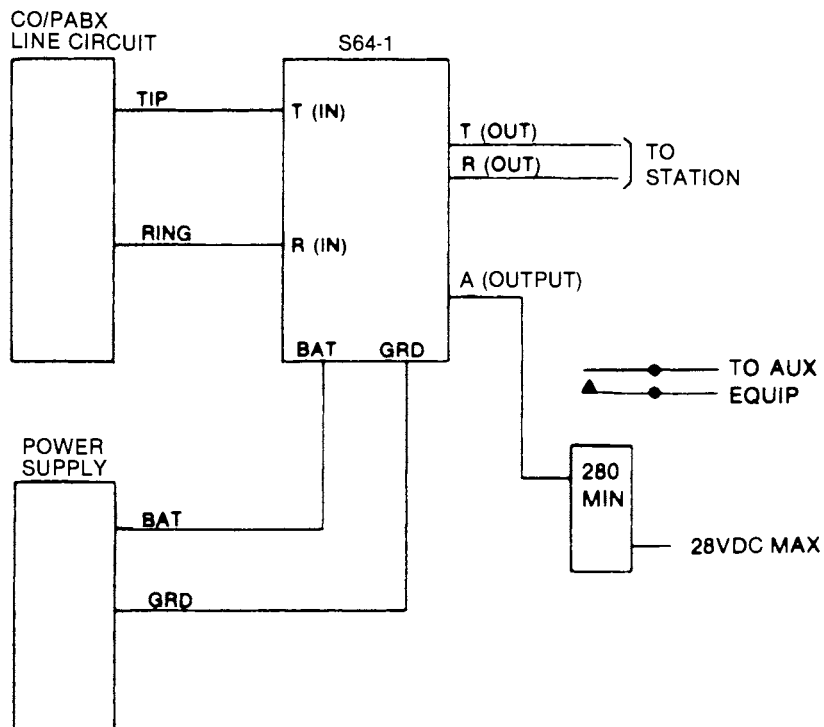


Fig. 3 — Application Schematic.

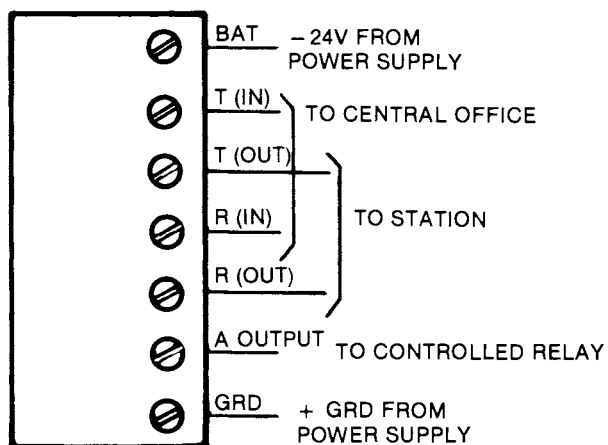


Fig. 4 — S64-1 Connections.

## S64-5RA LOOP DETECTOR FIVE CIRCUITS, RELAY SWITCHING

### 1. GENERAL

1.01 The S64-5RA is placed in series with a telephone talking path. It provides an off-hook signal when it senses loop current.

1.02 The output is relay operated; hence, ground, battery or any commonly used signal supply can be placed on the relay contacts to provide a desired off-hook signal. It can be used where telephones are not equipped with A and A1 wiring, and a ground input is required for key system equipment.

### 2. DESIGN FEATURES

2.01 The S64-5RA circuits are connected in series with the line. They detect loop currents of 2ma and over as an off-hook signal and provide a relay contact open and closure. They will sense an off-hook with a 70 ohm hold circuit across the line.

2.02 The S64-5RA circuit is not polarity sensitive and adds less than 0.5dB loss to the transmission path.

2.03 The S64-5RA will not respond to rotary dialing or to ringing generator if the path is from the ring side of the line, through the ringer to ground, or if the generator is above 30 Hz.

2.04 The S64-5RA will withstand voltages normally present on a central office line.

2.05 The S64-5RA contains five individual circuits.

2.06 The S64-5RA mounts in an apparatus cabinet, relay rack or on a backboard.

2.07 The S64-5RA connects through its plug to an A25B or equivalent 25-pair connector cable.

2.08 The S64-5RA will operate from -24V B BAT or -50V M BAT.

### 3. INSTALLATION

3.01 No special installation tools are required. Installation instructions are provided with each unit.

3.02 Mount the S64-5RA and secure the cable connector to the S64-5RA plug with the clamp provided.

3.03 Make connections as shown in Figs. 2, 3, 4 and 5.

3.04 Perform required tests.

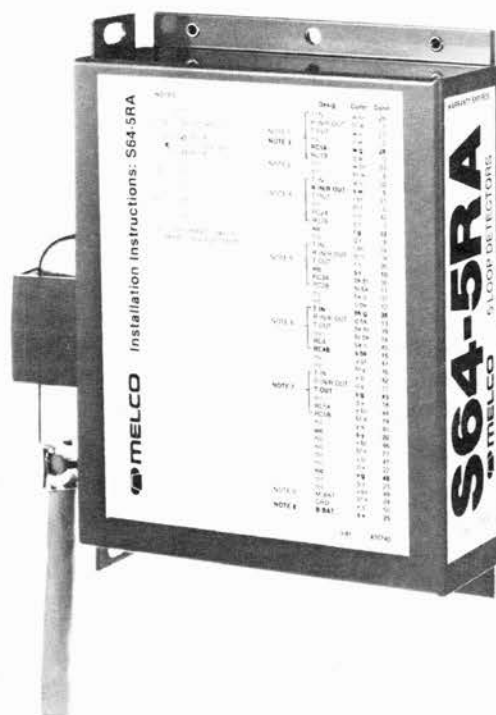


Fig. 1

### 4. MAINTENANCE

4.01 No provision is made for field adjustment or repair. If no output is detected, verify connections. Test the system by substituting a unit known to be serviceable.

4.02 The S64-5RA is warranted against manufacturing and material defects. If it fails within the warranty period, it will be repaired or replaced without charge. See the Melco Warranty Service Policy for repair and return details.

## 5. FCC REGULATIONS

5.01 This unit has been registered under Part 68 of the FCC Rules and Regulations. In accordance with this it has been granted FCC Registration Number AQT9PZ-69859-KX-N.

## 6. SPECIFICATIONS

Operating voltage range:

-24V nom. input ..... -18V to -28V DC  
or

-50V nom. input ..... -42V to -56V DC

Operating current:

-24V DC ..... idle: 20 ma nom.  
operated: 180 ma nom.

-50V DC ..... idle: 36 ma nom.  
operated: 190 ma nom.

Relay contact rating

[RC( ) A,B,C] ..... 1 amp at 24V DC or  
0.5 amp at 100V AC

Detection power (CO) ..... 50 mw

Sensitivity ..... 2 ma DC min.

Allowable frequency range:

bridged ringing ..... 30 Hz to 60 Hz, 125V max.

ring side to ground ..... 20 Hz to 60 Hz, 125V max.

Detector breakdown voltage ..... 1000V DC,  
tip or ring to ground

Longitudinal balance ..... better than -60 dB

Loop length ..... 1800 ohms

Recognition time ..... 3 ms min.

Release time ..... 100 ms min.

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

Humidity, Relative ..... 0 to 95%  
(Non-condensing)

Dimensions ..... 1.5" x 5.0" x 7.0"

Mounting ..... apparatus cabinet, relay  
rack or backboard

Connections ..... A25B or equivalent  
connector cable

Weight ..... 17 oz.

## 7. ORDERING GUIDE

7.01 Order as follows:

(QTY) S64-5RA LOOP DETECTORS  
(5 CKTS.)

from your supplier or distributor.

7.02 For further information or assistance with the S64-5RA or any Melco product, call or write:

MELCO LABS  
14408 N.E. 20th St.  
P.O. Box 4026  
Bellevue, WA 98009  
(206) 643-3400

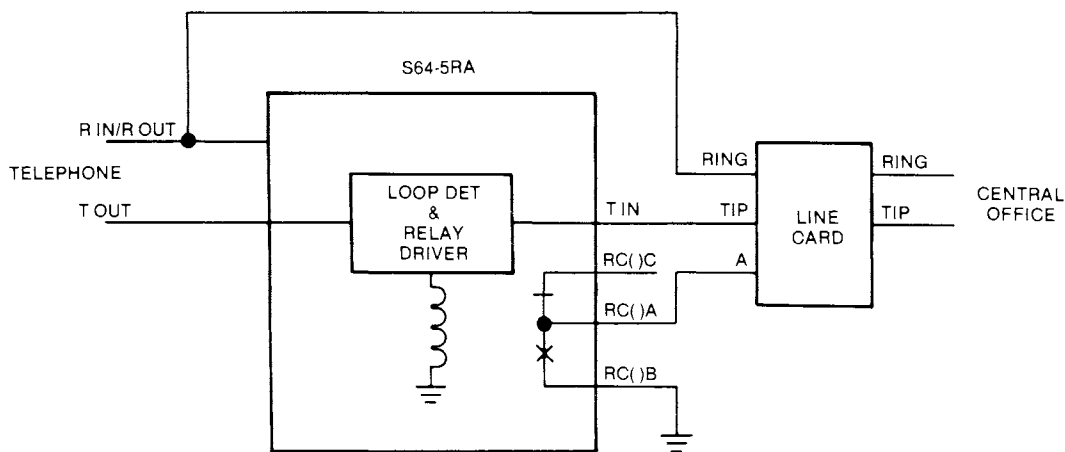


Fig. 2 — S64-5RA Applications with Line Card.



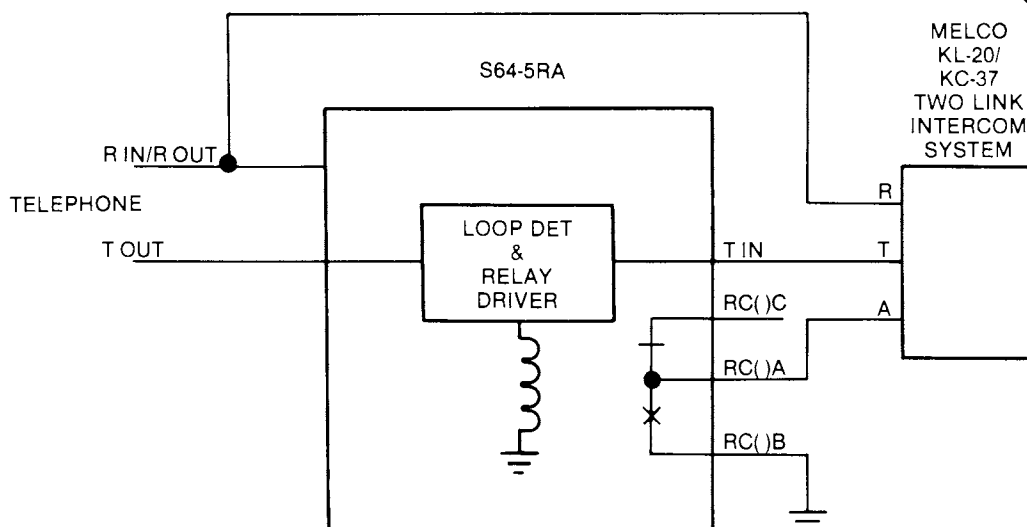
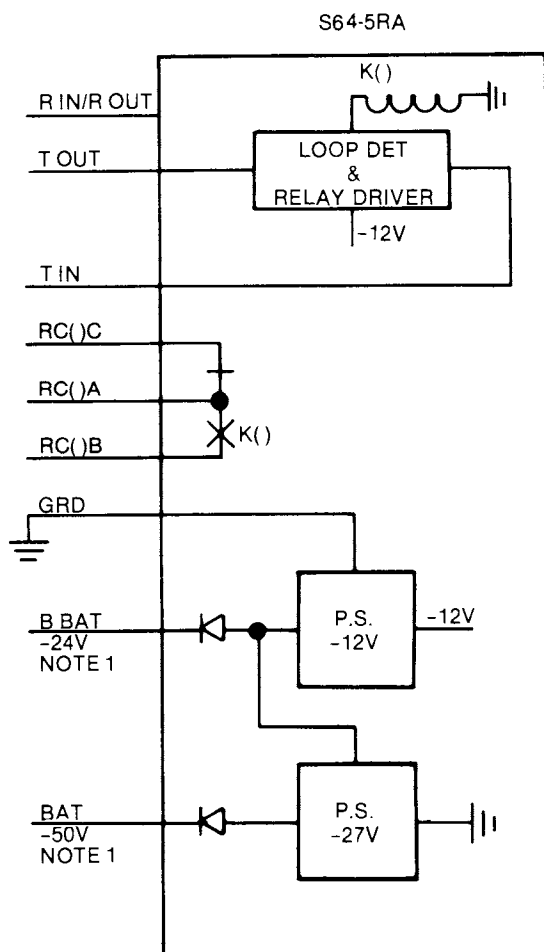


Fig. 3 — S64-5RA Applications with Melco KL-20 Two-Link Adapter and KC-37 Intercom.



NOTES:

1. CONNECT -24V DC OR -50 V DC, NOT BOTH.

Fig. 4 — S64-5RA Condensed Functional Schematic.

		66B3-50 CONN. BLOCK COLUMN A	A25B CONN. CABLE	S64-5RA CONN. CABLE
CIRCUIT 1 NOTE 1	T IN	1	w-bl	26
	R IN/R OUT	2	bl-w	1
	T OUT	3	w-o	27
	N/C	4	o-w	2
	RC1A	5	w-g	28
	RC1B	6	g-w	3
	RC1C	7	w-br	29
CIRCUIT 2	N/C	8	br-w	4
	T IN	9	w-s	30
	R IN/R OUT	10	s-w	5
	T OUT	11	r-bl	31
	N/C	12	bl-r	6
	RC2A	13	r-o	32
	RC2B	14	o-r	7
CIRCUIT 3	RC2C	15	w-g	33
	N/C	16	g-r	8
	T IN	17	r-br	34
	R IN/R OUT	18	br-r	9
	T OUT	19	r-s	35
	N/C	20	s-r	10
	RC3A	21	bk-bl	36
CIRCUIT 4	RC3B	22	bl-bk	11
	RC3C	23	bk-o	37
	N/C	24	o-bk	12
	T IN	25	bk-g	38
	R IN/R OUT	26	g-bk	13
	T OUT	27	bk-br	39
	N/C	28	br-bk	14
CIRCUIT 5	RC4A	29	bk-s	40
	RC4B	30	s-bk	15
	RC4C	31	y-bl	41
	N/C	32	bl-y	16
	T IN	33	y-o	42
	R IN/R OUT	34	o-y	17
	T OUT	35	y-g	43
NOTE 2	N/C	36	g-y	18
	RC5A	37	y-br	44
	RC5B	38	br-y	19
	RC5C	39	y-s	45
	N/C	40	s-y	20
	N/C	41	v-bl	46
	N/C	42	bl-v	21
NOTE 2	N/C	43	v-o	47
	N/C	44	o-v	22
	N/C	45	v-g	48
	N/C	46	g-v	23
	N/C	47	v-br	49
	M BAT	48	br-v	24
	GRD	49	v-s	50
	B BAT	50	s-v	25

NOTES:

1. RC( )A CONNECT TO RC( )B THROUGH NORMALLY OPEN CONTACTS AND RC( )C THROUGH NORMALLY CLOSED CONTACTS.
2. CONNECT M BAT (-50V) TO PIN 24 OR B BAT (-24V) TO PIN 25. DO NOT CONNECT BOTH.

N/C: NO CONNECTIONS.

Fig. 5 — Connections for A25B Connector Cables to 66B350 Connecting Block for S64-5RA.

## S-71™ OFF-PREMISE RINGING ADAPTER FOR KTS INTERCOMS

### 1. GENERAL

1.01 The S-71 provides a convenient method of ringing an off-premise key system intercom station without using an additional cable pair. The off-premise telephone can be either a main intercom station or an extension of one. The station is dialed the same as is any other intercom station.

1.02 The S-71 Off-Premise Ringing Adapter has received an FCC type KX registration; it is designed to be used with all FCC KN registered type 1A2 Key Telephone Systems, such as those marketed by: Western Electric, GTE Automatic Electric, Stromberg-Carlson, ITT, Northern Telecom, etc. Such installations may be made by Melco Labs, an authorized agent of Melco Labs, equipment manufacturers, telephone companies, registered telephone refurbishers, and those qualified for installation of KN or PN systems under FCC Rules Section 68.215.

### 2. DESIGN FEATURES

2.01 The S-71 does not require an additional cable pair. The leads that are usually used to signal the off-premise telephone are used instead to activate the S-71. Once activated, the S-71 provides ringing to the off-premise telephone over Tip and Ring.

2.02 The S-71 is activated by audible signal supply on the assigned R( ) lead. The R( ) lead operates the relay in the S-71, disconnecting the off-premise line from the common intercom line and connecting it to the audible signal supply.

2.03 When signaled on the assigned R( ) lead, the S-71 remains activated for a nominal period of one second or, with tone systems, for as long as the tone-pad is depressed.

2.04 The S-71:

- mounts on a backboard.
- connects to the key system power supply.
- operates from battery, audible supply or any AC voltage up to 160V AC.

### 3. INSTALLATION

3.01 Mount the S-71 on a backboard.

3.02 Remove the S-71 cover.

3.03 Cross-connect the R( ) lead of the S-71 to the selected R lead of the key system intercom.

3.04 Connect the T-IN and R-IN leads of the S-71 to the common Tip and Ring leads of the key system intercom.

3.05 Connect the T-OUT and R-OUT leads of the S-71 to the Tip and Ring leads of the extension telephone.



Fig. 1

3.06 Connect the AUD SUP, AUD GRD, B BAT and B GRD leads of the S-71 to the key system power supply.



