

RCX Series
DUPLEX INTERCOM SYSTEM

Models: **RCX-48CEU/B**, 48-station CEU
RCX-88CEU/B, 88-station CEU
RCX-128CEU/B, 128-station CEU

INSTALLATION MANUAL

- * This Installation Manual contains information on all the RCX components;
- RCX-48, 88 & 128CEU/B, • RA-D, RA-A, RA-B & RA-C Intercom stations.

Before actually installing the RCX equipment, the contents of this Manual must be thoroughly read and understood.

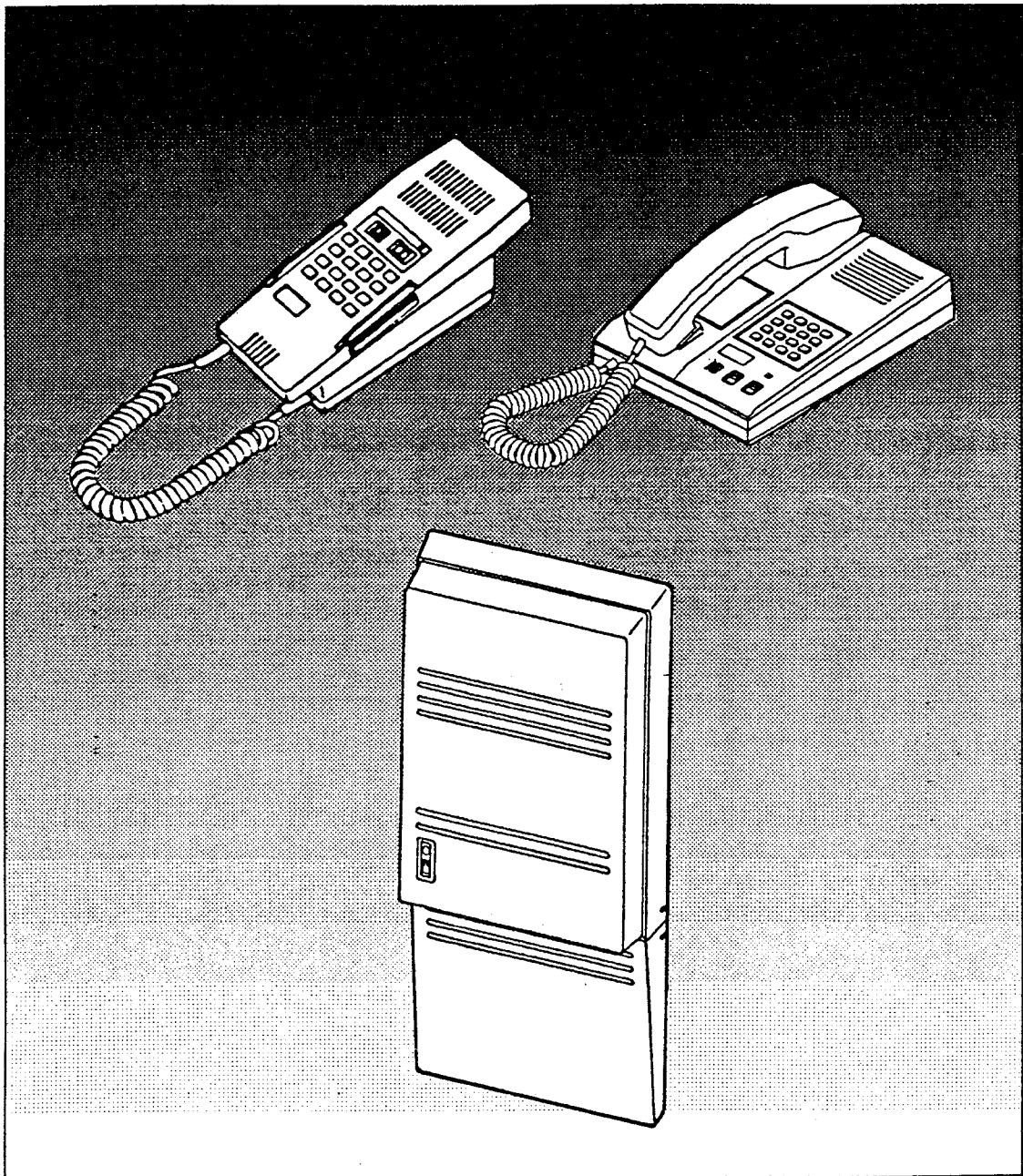


TABLE OF CONTENTS

Table of Contents	2
Precautions on Installation & Wiring	3
1 System Outline & Components	4 - 6
• System Outline (p.4)	
• Components available (p.5)	
• Components Selection Table (p.6)	
2 Names & Features	7 - 11
• RA-D (p.7)	
• RA-A (p.8)	
• RA-B, RA-C (p.9)	
• RCX-48CEU/B (p.9)	
• RCX-88CEU/B, RCX-128CEU/B (p.10)	
• MC-A/A & PB-YKX (p.10)	
• System Features (p.11)	
3. Installation & Wiring	12 - 19
• Selecting the CEU (p.12)	
• Talk channel (p.12)	
• Selecting the Appropriate Stations (p.12)	
• Wiring & cable (p.12)	
• Master/sub communication (p.12)	
• All call feature (p.12)	
• Power supply (p.12)	
• Paging terminals (p.12)	
• Programming Group Call (p.13 - 14)	
• Terminal Block Layout: RCX-48CEU/B (p.15)	
RCX-88CEU/B, RCX-128CEU/B (p.16)	
• Wire terminations on the RCX-CEU/B (p.17)	
• Wire terminations on Intercom Stations (p.17)	
■ Wiring Diagrams	18 - 20
• Communication (p.19)	
• Paging (p.19 - 20)	
4 Mounting	21 - 24
• RCX-CEU/B (p.21 - 22)	
• RA-A, RA-D (p.23)	
• RA-B, RA-C (p.24)	
5 Operations	25 - 27
6 Technical Precautions	28 - 30
7 Specifications	31 - 32



PRECAUTIONS ON INSTALLATION & WIRING



WARNING: (Negligence could result in death or serious injury)



CAUTION: (Negligence could result in injury to people or damage to property)



GENERAL PRECAUTIONS:



Prohibitions to dismantle the unit.



Prohibitions to subject the unit to water.



Take the unit to earth ground.



WARNING

1. The RCX-CEU/B is an electrical device, whose wiring must be done by qualified personnel.
2. Do not change or modify the RCX equipment.
3. Do not connect any power source other than specified to power input terminals on the RCX-CEU/B. Doing so can cause fire or damage the unit.
4. The RCX components must not be exposed to water or any other liquid.
5. Do not open the RCX-CEU/B without first turning off power switch. The high voltage is inside.
6. Make sure wires are connected properly before turning on power.
7. Keep AC outlet away from moisture and dust.



CAUTION

1. Do not install or make any wire terminations while the RCX-CEU/B is turned on. It can cause electrical shock or damage the unit.
2. Mount the RCX-CEU/B on wall in a convenient location, but not where it could be bumped or jarred.
3. Do not install the RCX components in any of the following locations, as it may cause the system to malfunction;
 - High or extreme cold temperature area: under direct sunlight, near equipment that varies in temperature, in front of air-conditioner, inside a refrigerated area, etc.
 - Places subject to moisture or humidity extremes,
 - Places subject to environmental conditions, such as oil, dust, chemicals, salt, etc.
 - Places subject to constant vibration or impact.



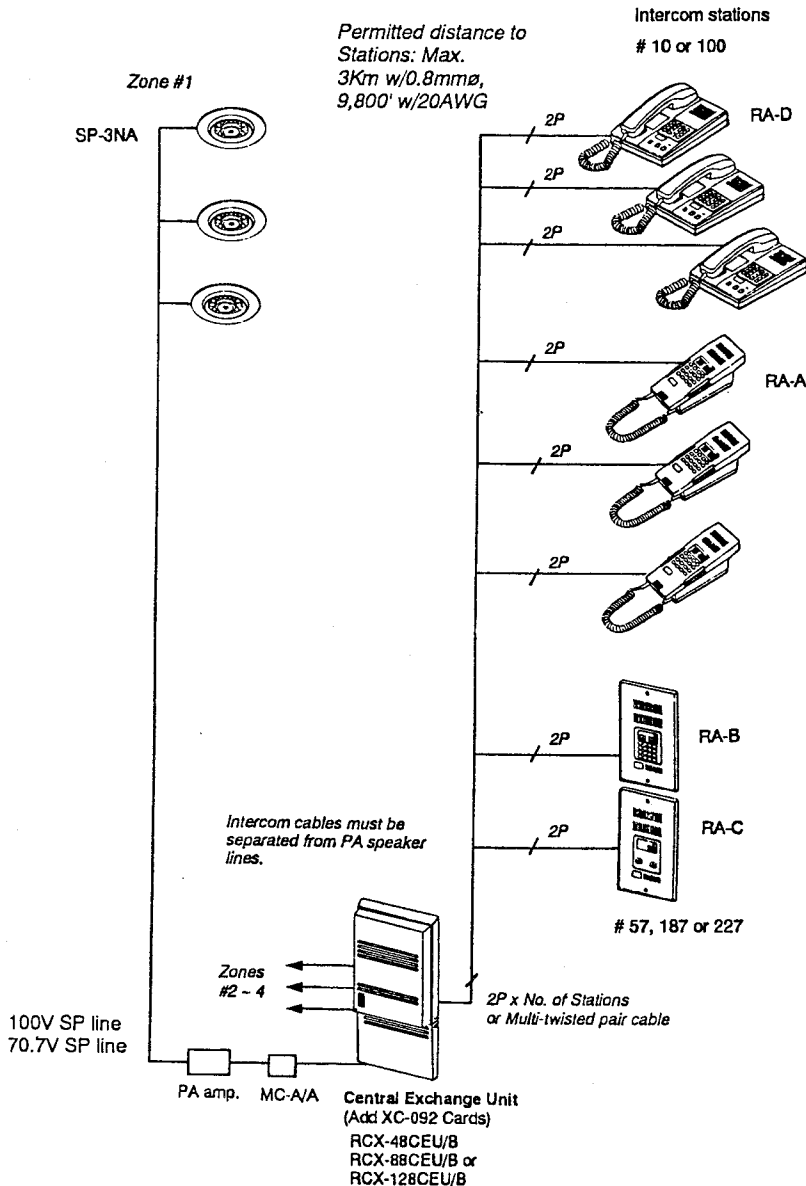
GENERAL PRECAUTIONS

1. The RCX-CEU/B components are designed for indoor use only. Do not install outdoors.
2. The RCX-CEU/B is not operable during a power failure.
3. In areas where broadcasting station antennas are close by, intercom system may be affected by radio frequency interference.
4. Keep all DC wiring at least 30cm away from AC 100 ~ 240V wiring, fluorescent lighting, or dimmer switches. Otherwise, cross AC wiring at a 90° angle.

1 SYSTEM OUTLINE & COMPONENTS

The RCX is a Duplex Intercom System for up to 48, 88, and 128 stations within mid or large-sized offices, factories etc. The microprocessor based system provides a multi-channel, total handsfree communication between any pair of master stations. A variety of communication functions are standard, and paging to a zone(s) is optional. Wiring is simple home run to CEU from each station, which can be located at a max. distance of 3Km, 9,800' away.

■ SYSTEM OUTLINE



1. The Central Exchange Unit (CEU) system.

- Punch block terminals with numbers. No individual station # setting.
- Installation of Station Card (XC-092) per 8-station increment. Optional Duplex Link Card (XC-091) to increase 4 or 8 more talk channels.

2. Four types of Intercom stations to meet environment.

- All master configuration.
- Total handsfree, handset simultaneous or press-to-talk communication.
- RA-C flush-mount sub station.

3. Up to four zones of paging can be installed without reducing stations.

- Each zone requires MC-A/A, Amp. & a appropriate number of speakers.
- Talkback feature with PB-YKX.

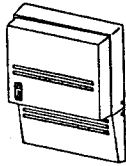
■ Package Contents

- RCX Central Exchange Unit (RCX-48CEU/B, RCX-88CEU/B or RCX-128CEU/B)
- Mounting hardware
- Package of screws
- Installation Manual

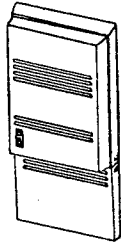
1. SYSTEM OUTLINE & COMPONENTS

■ COMPONENTS AVAILABLE

A. Central Exchange Unit (CEU)



RCX-48CEU/B



RCX-88CEU/B
RCX-128CEU/B

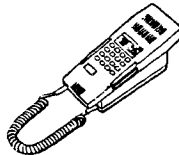
RCX-48CEU/B, 48-station CEU (4 talk channels)
RCX-88CEU/B, 88-station CEU (8 talk channels)
RCX-128CEU/B, 128-station CEU (12 talk channels)

Install **XC-092** Station Cards per 8 stations.
Duplex Link Card **XC-091** is optional to increase 4 or 8 talk channels.

B. Intercom Stations



RA-D



RA-A



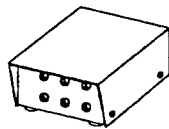
RA-B



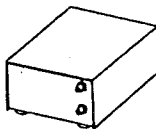
RA-C

RA-D, Speaker-Phone type station. Desk/wall.
RA-A, Compact open voice station w/handset bar switch. Desk/wall.
RA-B, Flush-mount open voice station
RA-C, Flush-mount sub station w/ master call & OFF buttons.

C. Paging Equipment



MC-A/A



PB-YKX



SP-3NA

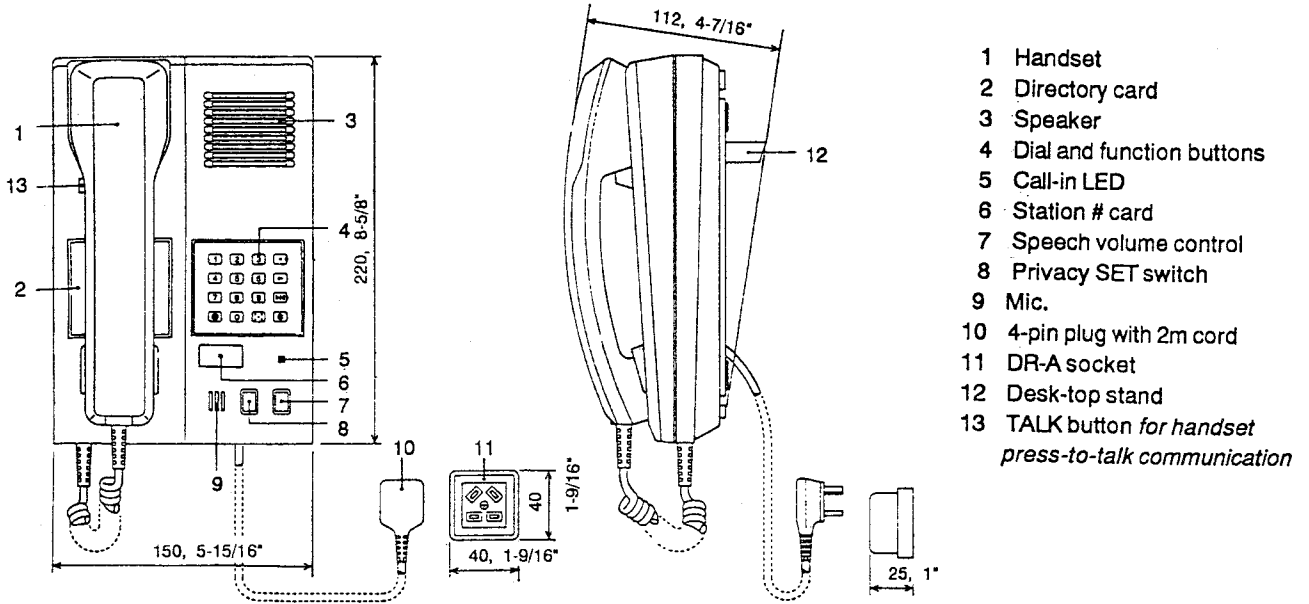
MC-A/A: Paging adaptor per zone (max. 4).
PB-YKX: Talkback adaptor.
SP-3NA: 3 watt paging speaker. Ceiling mount w/**NBZ-M** square flush or **N-EA** round surface frame.

■ Components Selection Table

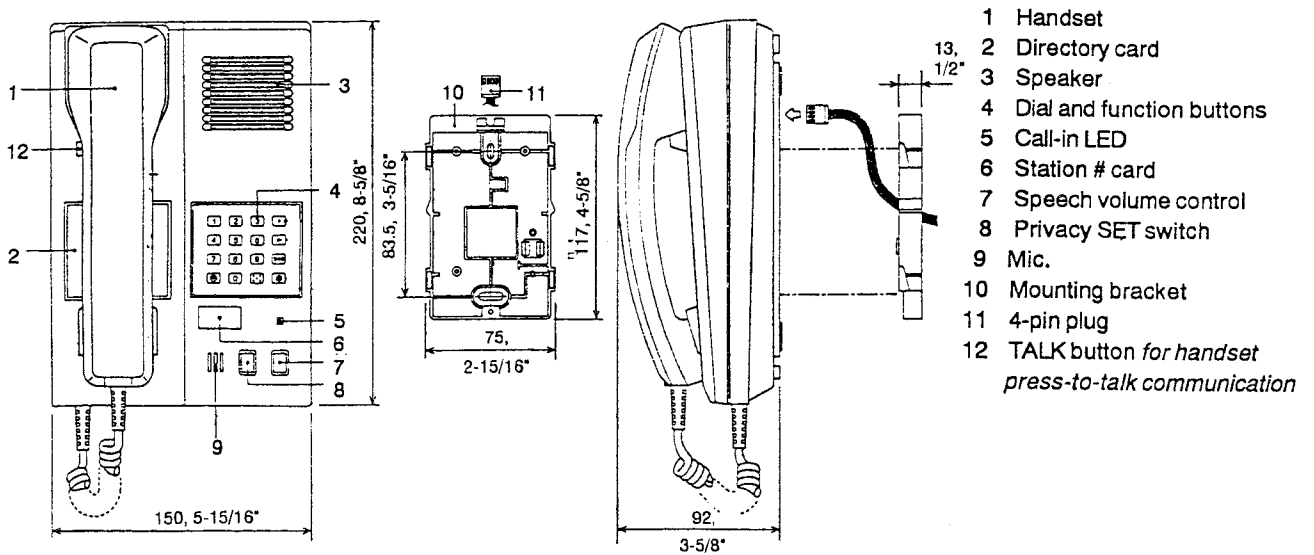
Station Capacity	Central Exchange Unit		
	1 ~ 48 pcs	1 ~ 88 pcs	1 ~ 128 pcs
Intercom Communication A. Central Exchnage Unit (CEU) RCX-48CEU/B RCX-88CEU/B RCX-128CEU/B	1 pce	1 pce	1 pce
XC-092 Station Card XC-091 Duplex Link Card <i>(add-on option)</i>	1 to 6 pcs 1 or 2 pcs	1 to 11 pcs 1 or 2 pcs	1 to 16 pcs 1 or 2 pcs
B. Intercom Stations RA-D, Speaker-phone type RA-A, Open voice/handset RA-B, Flush-mount RA-C, Flush-mount, sub	Max. 48 stations	Max. 88 stations	Max. 128 stations
Options C. Paging MC-A/A, Paging adaptor PB-YKX, Talkback adaptor Paging amplifier SP-3NA, PA speaker, 3watt	Max. 4 zones of paging can be installed without reducing station capacity. 1 to 4 pcs <i>(one per zone)</i> 1 to 4 pcs <i>(one per talkback zone)</i> 1 to 4 pcs <i>(one per zone)</i> Varies		
Note; All call is a standard feature for any RCX-CEU/B, and does not require a supplementary Regulator Unit.			

2 NAMES & FEATURES

■ RA-D, desk-top use

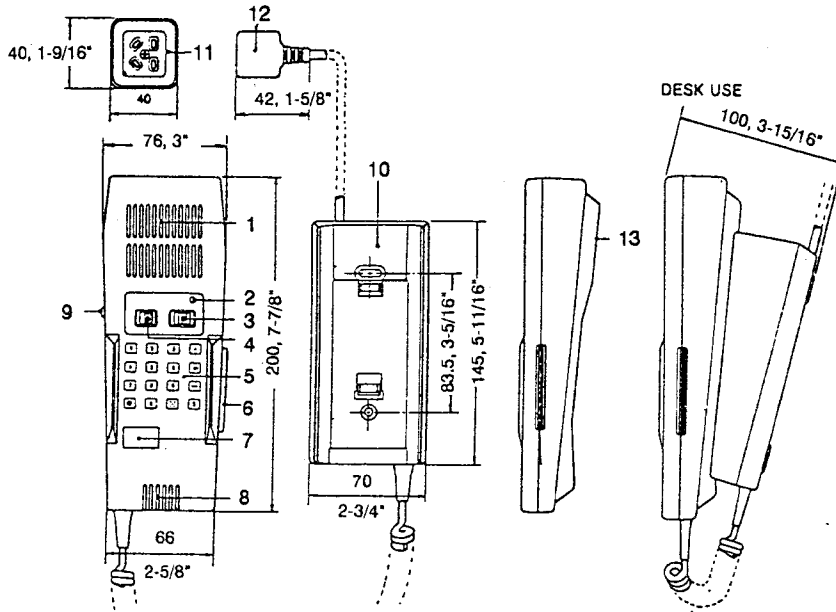


■ RA-D, wall-mount use



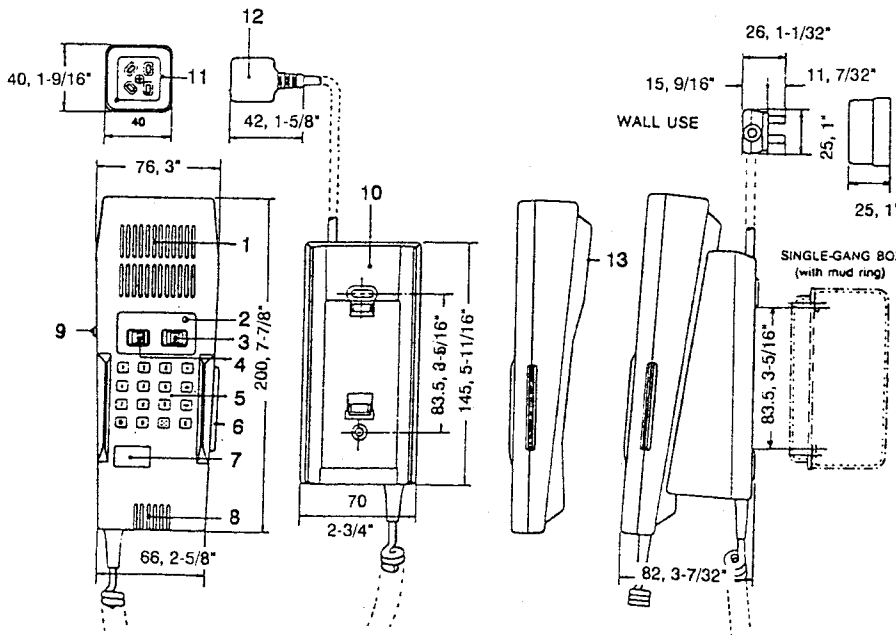
2 NAMES & FEATURES

■ RA-A, Desk-top use



- 1 Speaker
- 2 Call-in LED
- 3 Speech volume control
- 4 Privacy SET switch
- 5 Dial and function buttons
- 6 Handset bar switch
- 7 Station # card
- 8 Mic.
- 9 TALK button for handset
press-to-talk communication
- 10 Pedestal
- 11 DR-A socket
- 12 4-pin plug with 2m cord
- 13 Receiver (handset use)

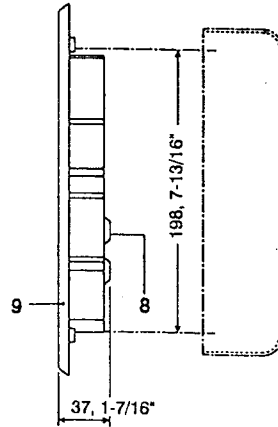
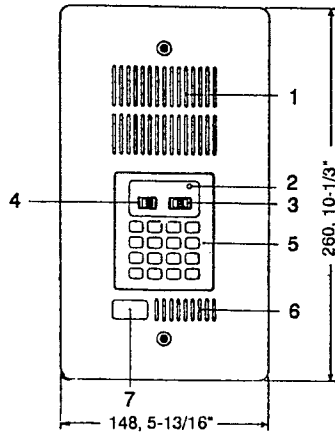
■ RA-A, Wall-mount



- 1 Speaker
- 2 Call-in LED
- 3 Speech volume control
- 4 Privacy SET switch
- 5 Dial and function buttons
- 6 Handset bar switch
- 7 Station # card
- 8 Mic.
- 9 TALK button for handset
press-to-talk communication
- 10 Pedestal
- 11 DR-A socket
- 12 4-pin plug with 2m cord
- 13 Receiver (handset use)

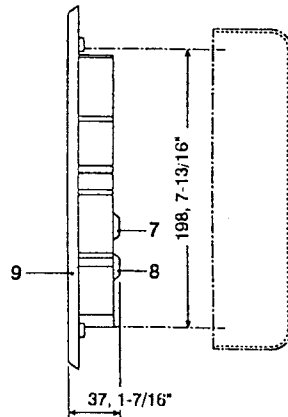
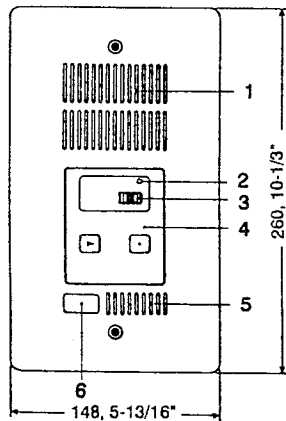
2 NAMES & FEATURES

■ RA-B



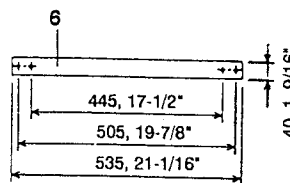
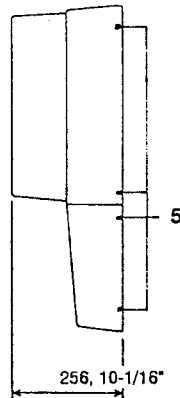
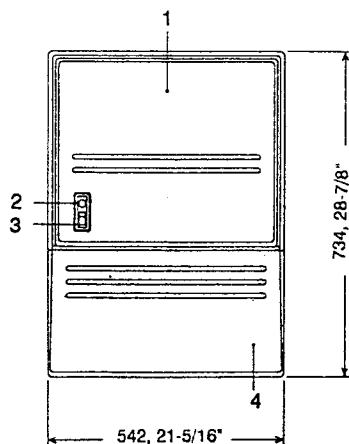
- 1 Speaker
- 2 Call-in LED
- 3 Speech volume control
- 4 Privacy SET switch
- 5 Dial and function buttons
- 6 Mic.
- 7 Station # card
- 8 Terminals block
- 9 Front stainless panel

■ RA-C



- 1 Speaker
- 2 Call-in LED
- 3 Speech volume control
- 4 One-touch CALL & OFF buttons
- 5 Mic.
- 6 Station # card
- 7 Terminals block
- 8 Terminals for external switch
- 9 Front stainless panel

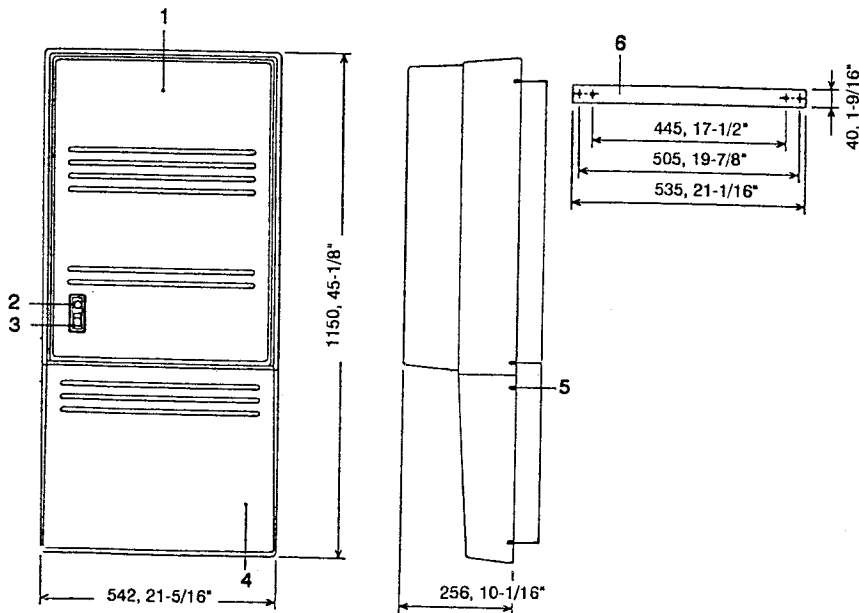
■ RCX-48CEU/B



- 1 Power, PC section cover
- 2 Power lamp
- 3 Power switch
- 4 Terminal section cover
- 5 Screws(8) for covers
- 6 Mounting hardware

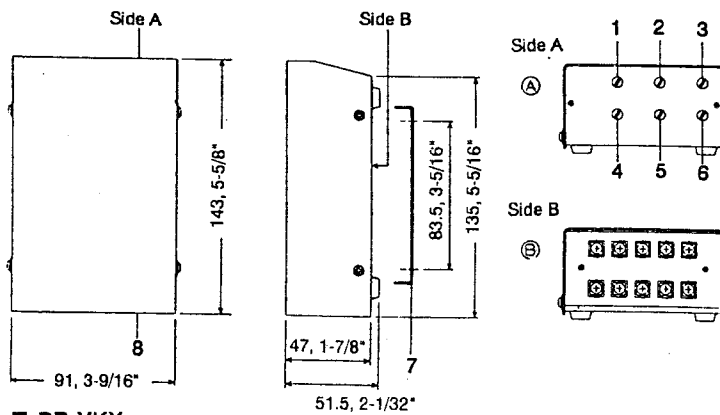
2 NAMES & FEATURES

■ RCX-88CEU/B, RCX-128CEU/B



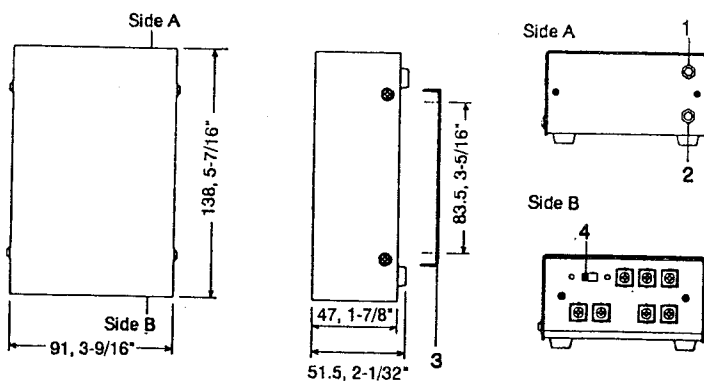
- 1 Power, PC section cover
- 2 Power lamp
- 3 Power switch
- 4 Terminal section cover
- 5 Screws(8) for covers
- 6 Mounting hardware

■ MC-A/A



- 1 MUSIC Volume control
- 2 MUSIC Bass control
- 3 MUSIC Treble control
- 4 PAGING Volume control
- 5 PAGING Bass control
- 6 PAGING Treble control
- 7 Mounting bracket
- 8 Terminals block

■ PB-YKX



- 1 Receive volume control
- 2 noise reduction control
- 3 Mounting bracket
- 4 System selector switch
Set to left YKX position.



2. NAMES & FEATURES

■ SYSTEM FEATURES

1. **Duplex Intercom system with RCX Central Exchange Unit.**
 - Three types of CEU's in 48, 88, & 128-station sizes.
 - Install XC-092 Station Cards to incorporate as many stations as required.
2. **The RCX-CEU/B employs Punch-block terminals.**
 - Home-run wiring with 2 twisted pair cable to each station.
 - Station # is assigned with wire terminations.
3. **Four types of Intercom stations.**
 - RA-D: Speaker-phone master station.
 - RA-A: Compact open voice master station.
 - RA-B: Flush-mount open voice master station.
 - RA-C: Flush-mount open voice sub station.
4. **Three types of communication available: either total handsfree at both stations, handset simultaneous or press-to-talk communication.**
 - Multi-talk channels, including paging.
 - Add-on Duplex Link Card XC-091. Four channels per Card (1 or 2 cards).
 - Speech volume control on each station.
 - Variety of standard communication functions.
 - Privacy SET/OFF switch. Temporary privacy release.
 - Master/Sub communication: Speed dialing without dialing station # to subsequent 9 stations from Master stations Nos. 10, 20 ... (100, 110, ...).
5. **All Call is a standard feature (any RCX-CEU/B)**
 - Does not require a supplementary Regulator Unit.
6. **Music distribution from Intercom stations.**
7. **Provided four terminals of Zone page installation.**
 - Each zone requires MC-A/A, PA amp. & appropriate number of speakers.
 - Talkback adaptor.
 - Background music.
8. **Long communication distance.**
 - Max. 3Km to RCX-CEU/B with 0.8mmø cable. (9,800' w/20AWG)

Operational Features

RA-A & RA-D;

- Open voice, handsfree voice-actuation; Upon the channel established, talk and listen at both stations.
- Handset simultaneous communication; Pick up handset on RA-D or pick up RA-A intercom and hold the back receiver to your ear.
- Press-to-talk communication; Press  TALK button to turn your communication to press-to-talk mode. TALK button on left side(RA-A) or on handset(RA-D) functions same way as  TALK button.

RA-B & RA-C;

- Handsfree voice-actuation or press-to-talk communication.
- For best results, talk toward the mic. from the front within an operable distance.

3. INSTALLATION & WIRING

■ Selecting the CEU

The RCX is a microprocessor-based intercom system, with a Central Exchange Unit. Each CEU is available without any XC-092 Station Card installed. Add XC-092 Cards in 8-station step.

CEU	XC-092 Card	Capacity
RCX-48CEU/B	6 sockets	48 stations
RCX-88CEU/B	11 sockets	88 stations
RCX-128CEU/B	16 sockets	128 stations

■ Talk channel

The XC-091 Duplex Link Card provides 4 talk channels. As shown, each RCX-CEU/B has two vacant sockets to install an XC-091 Card(s).

CEU	XC-091	Channel	Add'l XC-091	Total channel
RCX-48CEU/B	One card	4 ch.	Two cards	12
RCX-88CEU/B	Two cards	8 ch.	Two cards	16
RCX-128CEU/B	Three cards	12 ch.	Two cards	20

■ Selecting the Appropriate Stations

Select an appropriate Intercom station to meet environmental conditions.

Model #	Type	Suggested place
RA-D	Open voice/handset combination	Quiet office environment
RA-A	Open voice station, with manual handset bar switch	Quiet office environment
RA-B	Flush-mount open voice station	Open work area, requiring handsfree communication
RA-C	Flush-mount sub station	Open work area, requiring quick & handsfree communication with a master

■ Wiring & Cable

Home-run wiring with 2 twisted pairs cable (polarized) to each station or multiple twisted pair cables. Use a 2 twisted pair (shielded) cable of 0.65mm ϕ or 0.8mm ϕ . (22AWG or 20AWG)

■ Power supply



The RCX-CEU/B includes an AC 220-240V line input terminals, with grounding terminal. (AC 110 - 125V for N. America)

■ Paging terminals

Each RCX-CEU/B is equipped with four zone page terminals P1 ~ P4 and talkback terminals TB1 ~ TB4. See WIRING DIAGRAM section. RC1 ~ RC4 may be used for remote control of external equipment.

■ Master/Sub communication

The RCX system provides master/sub communication between one Master (any) numbered 10, 20, ... (100, 110, ...) and Sub station (any master or RA-C) numbered with subsequent 11 ~ 19, 21 ~ 29 ... (101 ~ 109, 111 ~ 119, ...).

This is auto programmed with wire terminations. In addition to routine call with station # dialing, each Master can call the 9 subs with  and number 1 ~ 9 from the Master, and from Subs, with single push of  button. RA-C sub station must not be connected to any stations #10, 20, ... (100, 110, ...).

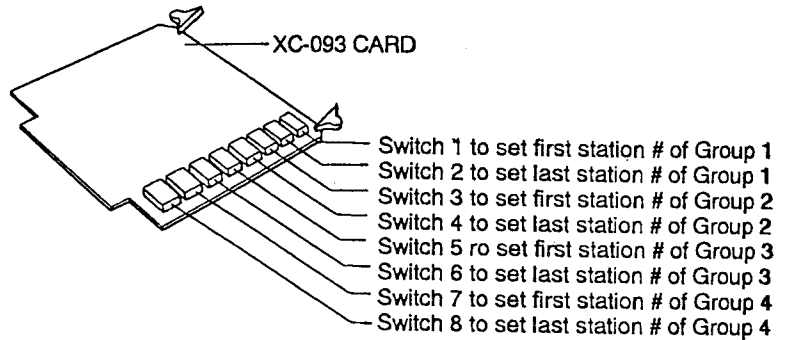
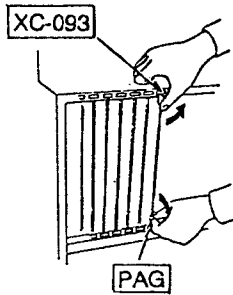
■ All Call feature built in on all the CEU's

All the RCX-CEU/B's are equipped with Regulator Unit required for All Call.

3. INSTALLATION & WIRING

■ Group Call Programming

Press handles in arrow direction and pull.



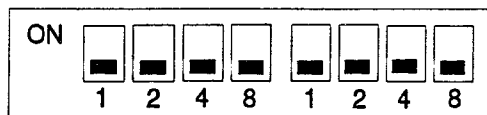
The RCX system has a programmable Group Call, which is a desk-top announcement through a grouped stations. The stations can be divided up to 4 groups of not more than 32 stations.

■ How to Program Group Call

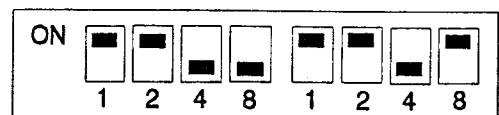
1. Turn off the power switch on the RCX-CEU/B. Remove main & sub front covers. Remove the shield plate, and pull the XC-093 Card from PAG socket.
2. On two blocks of 8 dip switches, set the first and the last station number of Group 1. The 10 digit with the left half 1, 2, 4, 8 switches, and the 1 digit with the right half 1, 2, 4, 8 switches.
3. Referring to the Chart on next page, locate the switches to ON or OFF position. For example, to obtain 53, locate switches as shown below;
4. Same way, proceed setting for the last station # on the next block. After completion, remount the XC-093 Card to PAG socket. Turn on the power switch of the RCX-CEU/B.

On every RCX-48, 88, 128CEU/B, all dip switches are initially set to OFF position.

To program a station No.53, refer to the chart on next page, and you get Symbols **3** & **B**. Locate dip switches according to the chart, which are as follows;



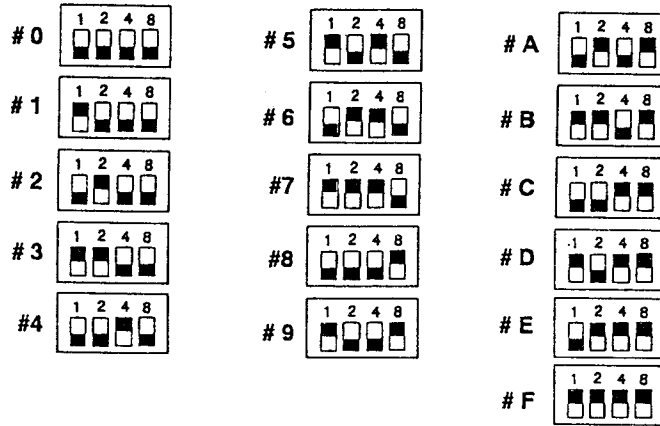
┌──────────┐ ┌──────────┐
└──────────┘ └──────────┘
First symbol Second symbol



┌──────────┐ ┌──────────┐
└──────────┘ └──────────┘
 $1 + 2 \text{ ON} = 3$ $1 + 2 + 8 \text{ ON} = 11(B)$

■ Programming for Group Call

On the XC-093 Paging Card, locate the two 1, 2, 4, 8 dip switches of 8 blocks as follows;



■ Programming Chart of first & last station # (of 4 groups)

Chart for RCX-48CEU/B

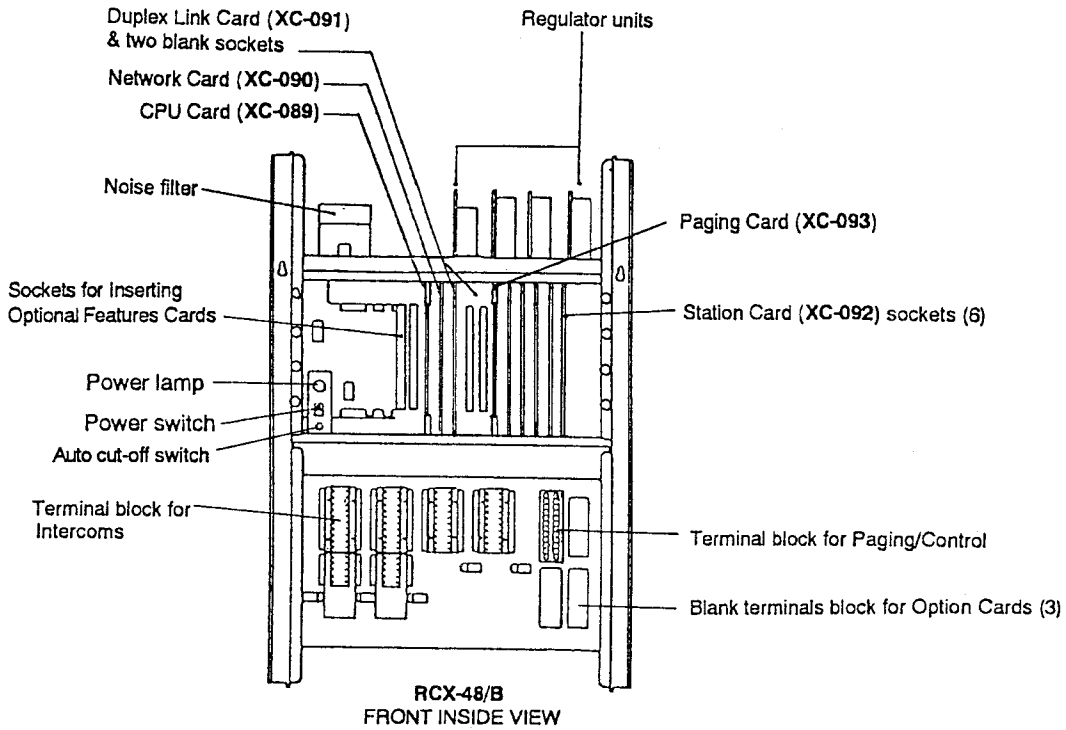
STATION NUMBERS OF EACH GROUP																									Symbol of 1st 1,2,4,8
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	1									
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		2								
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	3									
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		Symbol of 2nd 1,2,4,8								

(for up to 48-station system)

Chart for RCX-88CEU/B, RCX-128CEU/B

STATION NUMBERS OF EACH GROUP																									Symbol of 1st 1,2,4,8
100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	1									
116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131		2								
132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	3									
148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163		4								
164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	5									
180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195		6								
196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	7									
212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227		8								
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	Symbol of 2nd 1,2,4,8									

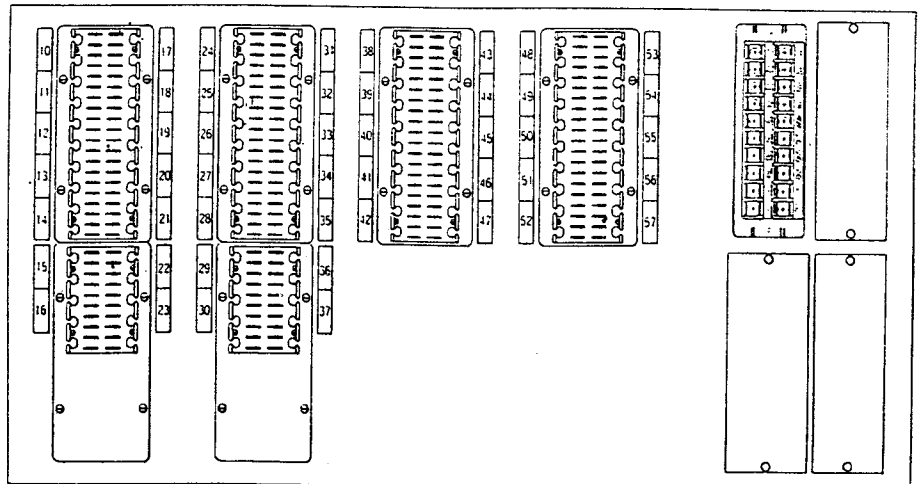
(for up to 128-station system)

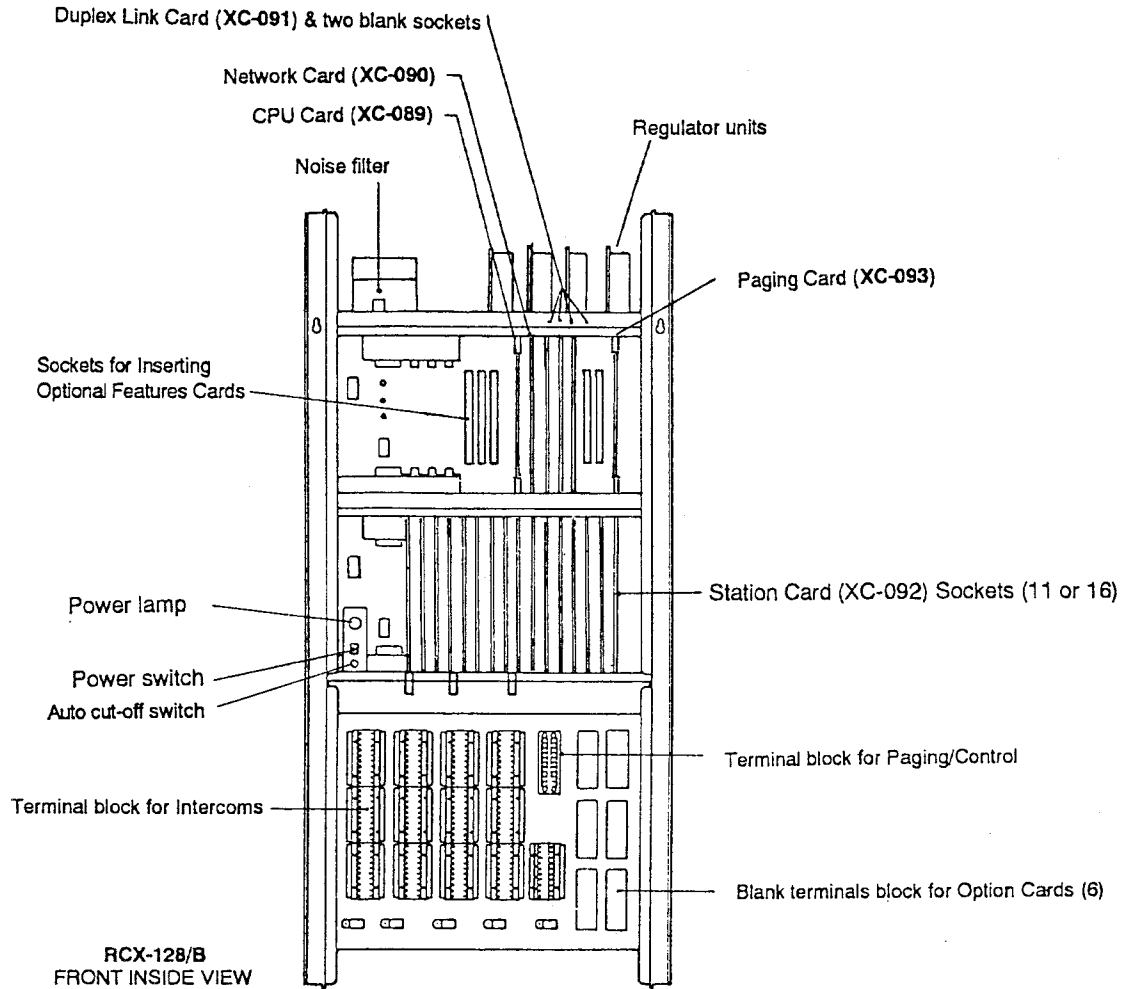


■ Terminals identifications

- | | |
|-----------------|--|
| 10 ~ 57: | Intercom stations punch-block terminals |
| P1 ~ P4: | Paging/control zone output (screw terminals) |
| TB1 ~ TB4: | Talkback zone input |
| RM1 ~ RM4: | Remote control output |
| +, GND (any): | Power supply for MC-A/A, PB-YKX. |
| BGM, GND (any): | BGM input for distribution through stations |

■ Terminals Block

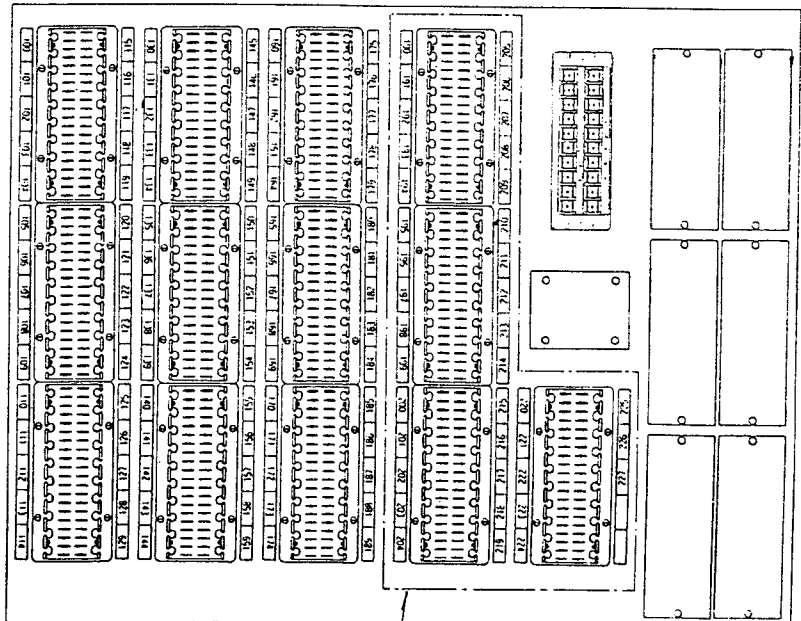




■ Terminals identifications

- 100 - 187 or 100 - 227: Intercom stations punch-block terminals
- P1 - P4: Paging/control zone output (screw terminals)
- TB1 - TB4: Talkback zone input
- RM1 - RM4: Remote control output
- +, GND (any): Power supply for MC-A/A, PB-YKX.
- BGM, GND (any): BGM input for distribution through stations

■ Terminals Block



4. INSTALLATION & WIRING

■ Wire terminations on the RCX-CEU/B

Before you start wiring, it is recommended to establish a system color code and continue this color code throughout the entire system. (Example No.1 Black, No.2 Red, No.3 White, No.4 Green).

A standard punch-on tool with a cutting edge will be required for connecting to the terminal board. Select cable run for first station and using your color code connect to terminals 1, 2, 3 & 4 of stations No.10 on punch block. You do not strip the wires, simply lay in notch of terminal and punch on with tool. This will make a good connection and cut off any surplus wire. Continue until all station runs are connected.

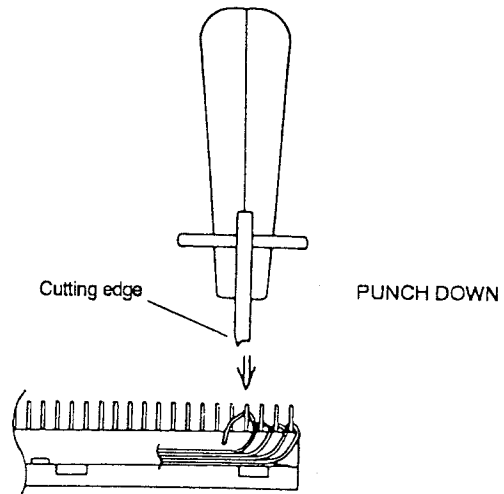
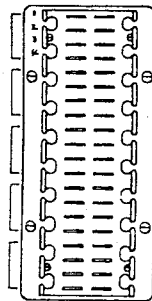
To station # 10

To station # 11

To station # 12

To station # 13

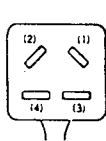
To station # 14



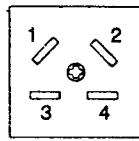
Punch-Block Terminal (side view)

■ Wire terminations on Intercom Stations

RA-D, RA-A

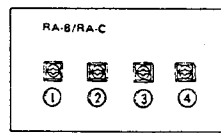


4P plug



DR-A socket

RA-B, RA-C



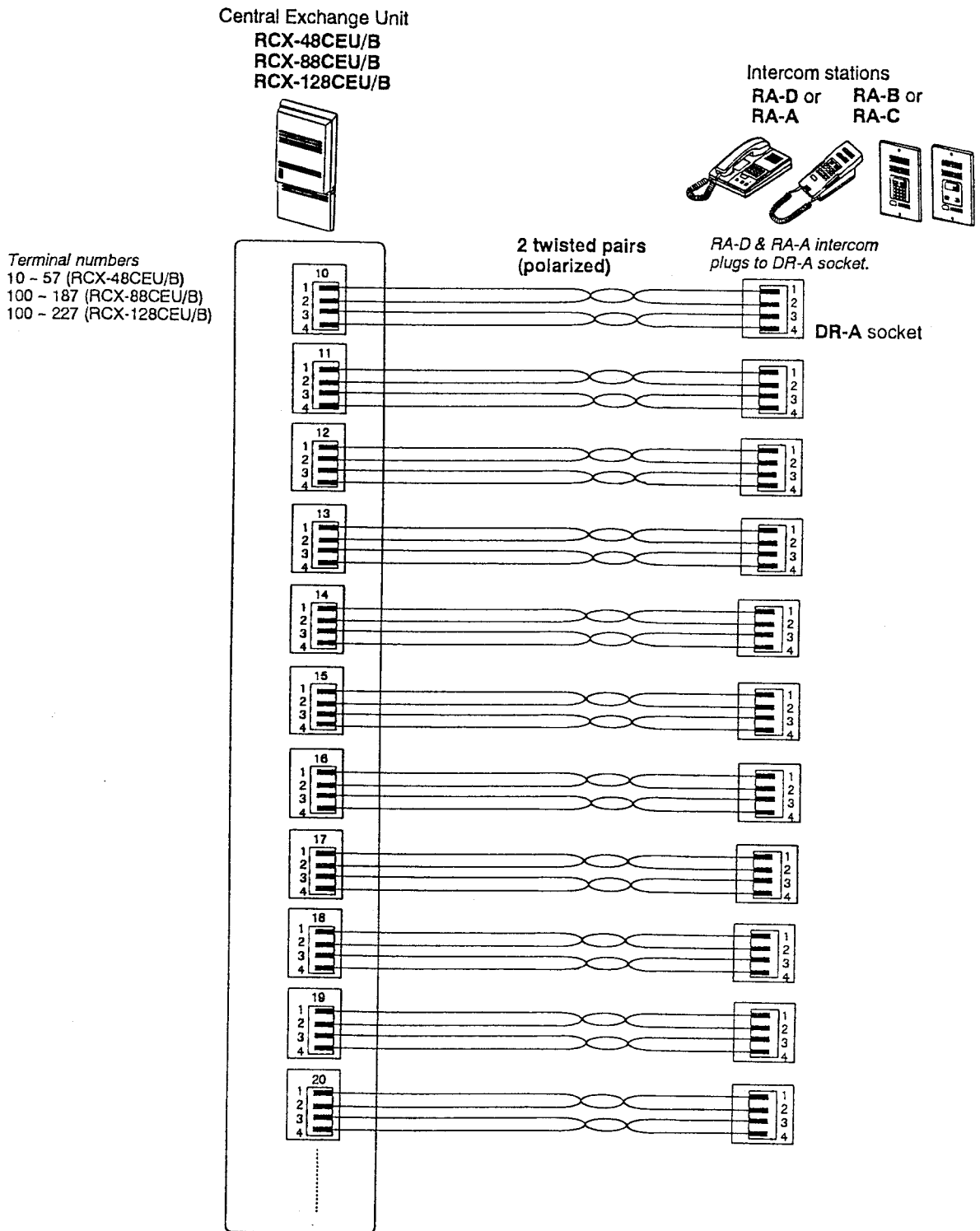
- 4P plug: Plugs into the DR-A socket.
- DR-A: Connects to Terminal section on RCX-CEU/B.

1, 2, 3, 4: Connect to each numbered four terminals (polarized).

1, 2, 3, 4: Connect to each numbered four terminals (polarized).

■ WIRING DIAGRAMS

1. Communication



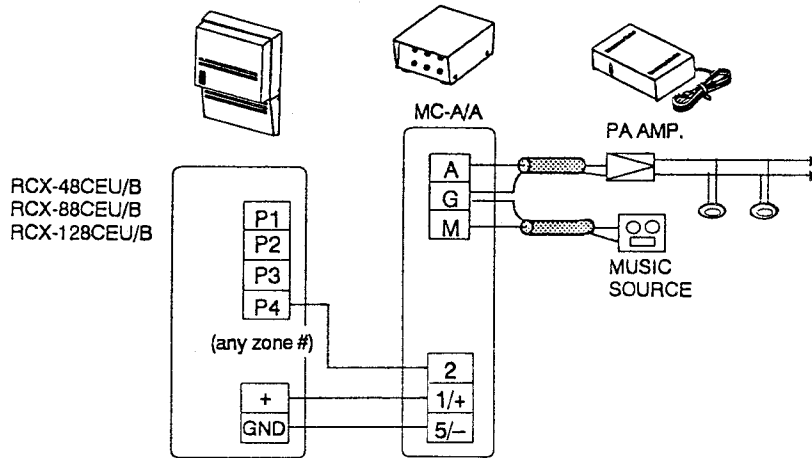
Note:

Master station connected to terminals No.10, 20, 30, ... (100, 110, 120 ...) are auto programmed as Master to Sub stations Nos.11 - 19, regardless of type.

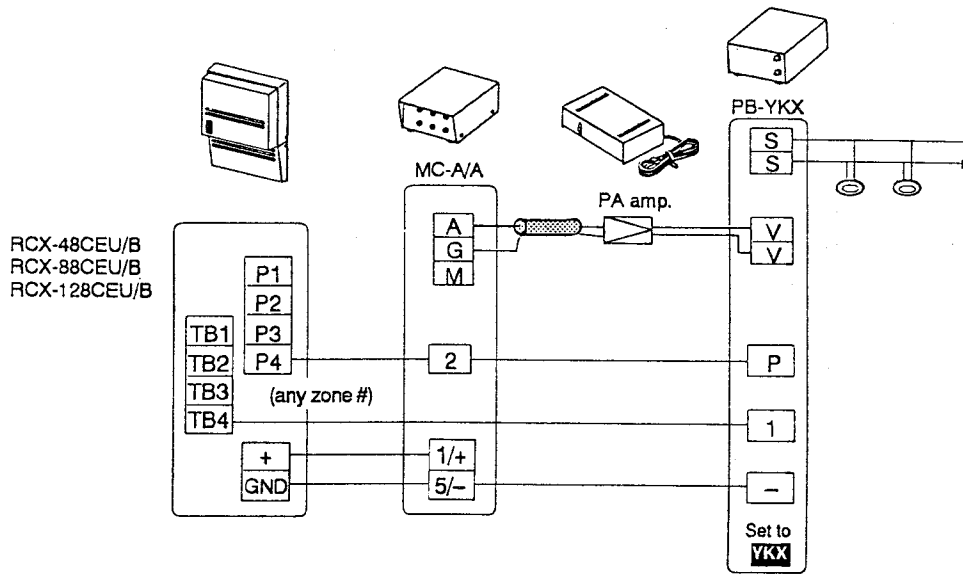
■ WIRING DIAGRAMS

2. Paging

■ Single zone of Paging



■ Single zone of Paging w/Talkback

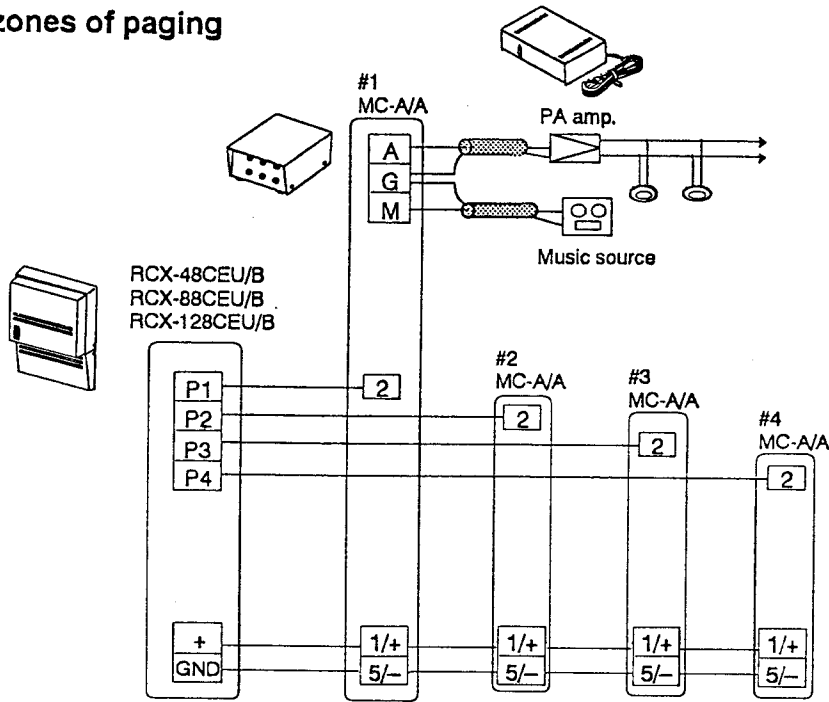


* Music is optional.

■ WIRING DIAGRAMS

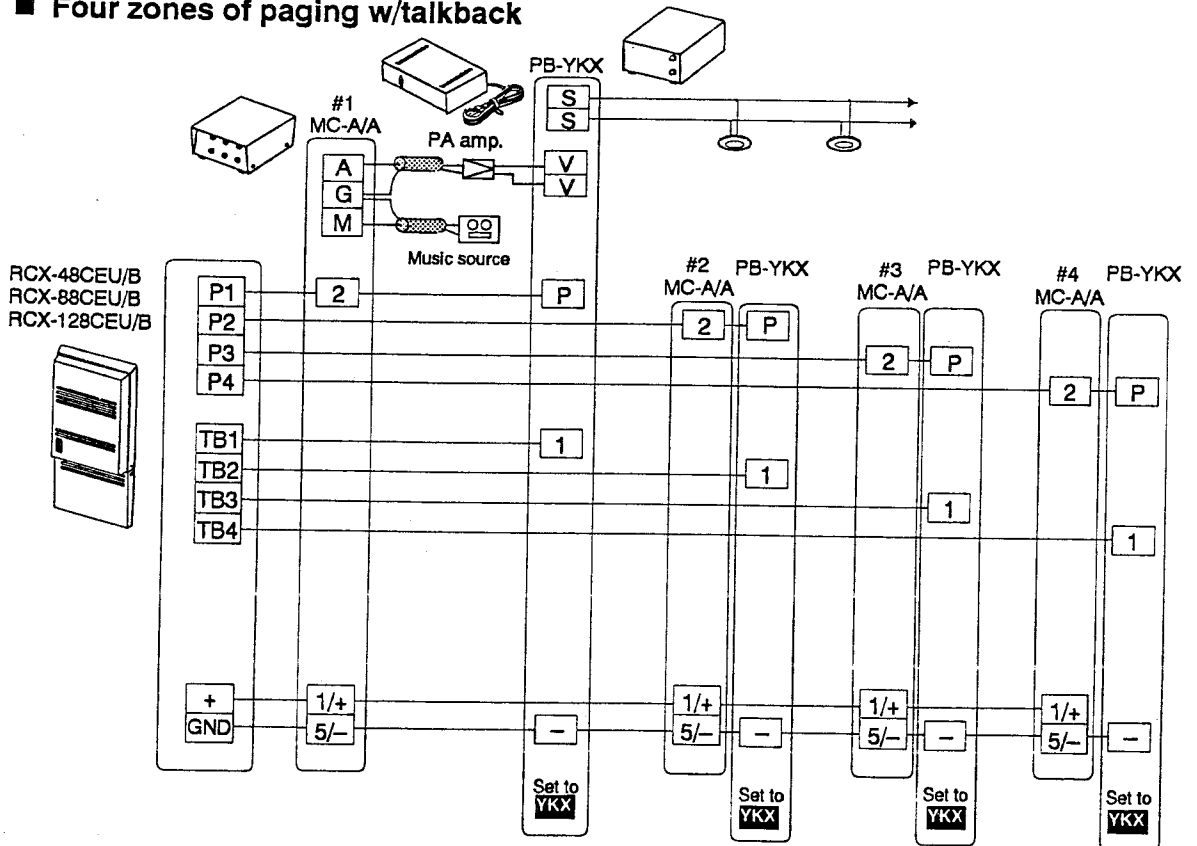
3. Paging to 4 zones

■ Four zones of paging



* Paging amp. & speaker line & Music wiring are not shown on MC-A/A #2 ~ 4.
Music source can be connected in common for all the zones.

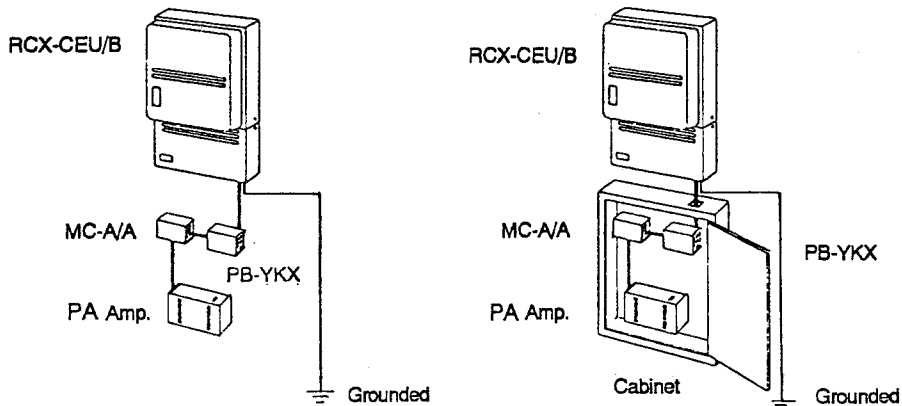
■ Four zones of paging w/talkback



* Paging speaker line & BGM wiring are not shown for PB-YKX #2 ~ 4.
BGM source can be connected in common.

4 MOUNTING

• RCX Central Exchange Unit



■ CEU Mounting Location

Be sure to turn off the power switch on the RCX-CEU/B before you open the unit or make wire terminations.

The location of the Central Exchange Equipment must meet the following criteria;

- Ambient temperature range: 0°C ~ +40°C (+32°F ~ +104°F).
- Area must be as dust free as possible, and not too dry or too humid.
- Units must be wall mounted.
- Avoid static electricity.

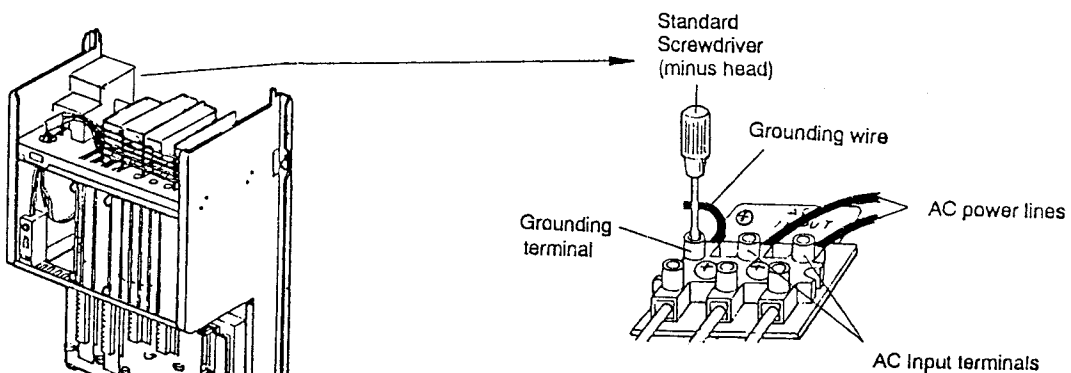
There are two basic methods (shown above) of mounting the RCX-CEU/B equipment.

The Central Exchange Unit should not be installed inside of the electrical enclosure, which could restrict ventilation. If the adaptor(s) and amplifier(s) must be located in an area exposed to people, use of a cabinet is recommended to reduce possibility of someone changing level controls, or damaging wiring.

If the RCX-CEU/B equipment is to be installed in an electrical room or enclosure, it is recommended that a piece of 2.5cm, 1" plywood of adequate size be secured to the wall first and equipment then mounted to the plywood. This will insure adequate backing mounting screws, incoming cable distribution, and tie down.

■ Connecting AC Power Line and Grounding Wire

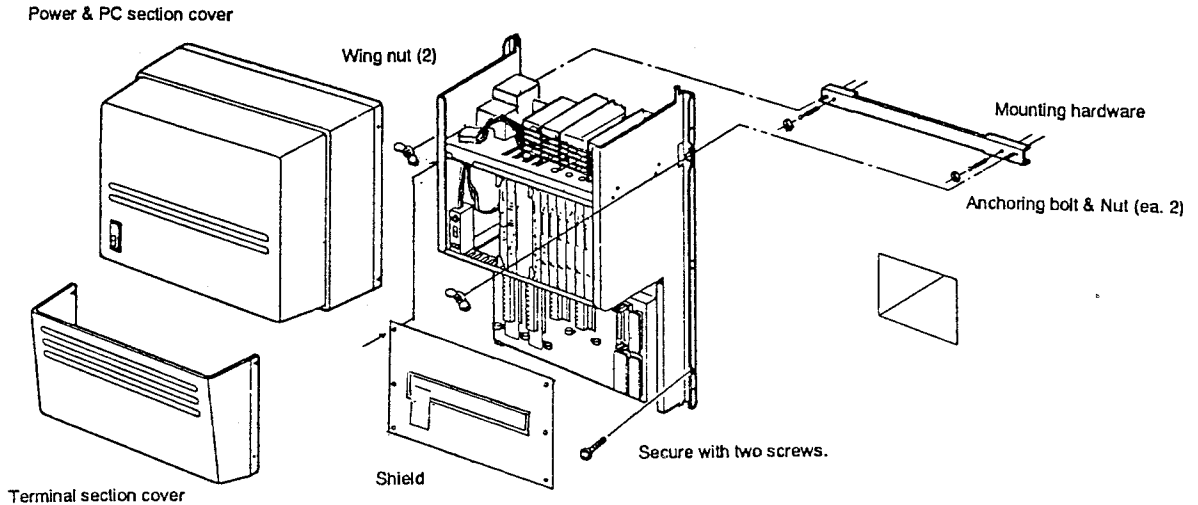
As shown below, using standard screwdriver, connect AC power line to AC INPUT terminals, and grounding wire to EARTH-marked terminal. Observe that the grounding wire be longer than AC power wires, and that the AC power wires be fastened by the cable clamp so as not to be pulled tensely.



* AC Input & Grounding terminals are clearly marked. Be sure to take the ⊕ marked terminal to earth.

5. MOUNTING

• RCX Central Exchange Unit



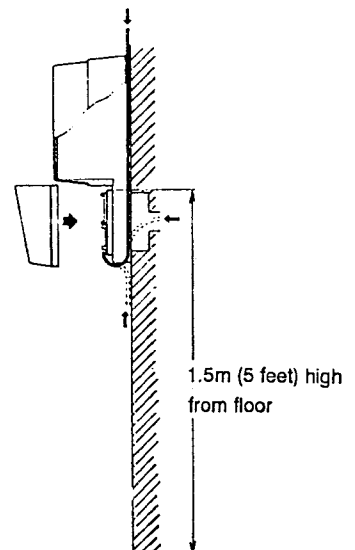
■ Wall-mounting

1. Attach a template provided to wall. Make a hole of 8.5mm, 1/8" diameter and 20 - 25mm, 3/4" - 1" deep in the wall.
2. Remove a nut from the anchoring bolt and drive in a wedge by hammer at 2 points.
3. Attach the mounting hardware to the bolts and secure firmly by the nuts.
4. Remove covers of the RCX unit and hook the RCX unit to the protruding bolts of the mounting hardware and secure firmly the RCX unit by wing nuts.
5. Make wire terminations. Keep the intercom cable away from AC power line.

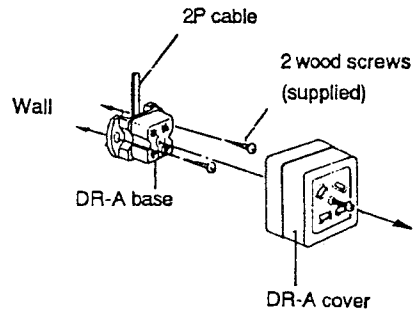
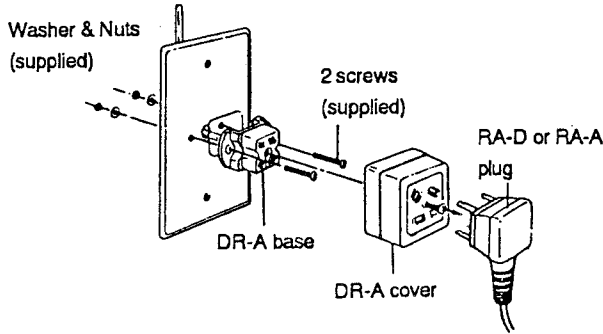
■ CEU Mounting Height

Central Exchange Unit shall be wall mounted approximately 1.5m high from the floor. The RCX-48CEU/B weights about **20kg, 44 lbs.** and the RCX-128CEU/B about **40kg, 88 lbs.** The wall, therefore, has to be strong enough to secure the CEU firmly.

Extend incoming cable from either top, bottom or through gang box. The space may permit cable of up to **50 pair of 0.65mm \varnothing of 19mm \varnothing , 22AWG of 3/4" \varnothing** to be passed between the RCX-CEU/B and the wall.



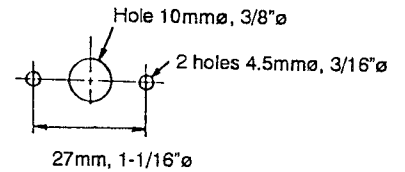
4. MOUNTING



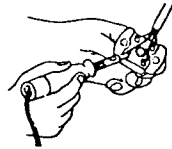
■ Mounting DR-A Socket

In either desk-top or wall-mounting, RA-A & RA-D stations plug into DR-A socket. As shown, mount DR-A on wall or flush-panel. Locate the station within the terminal cord length of approx. 2m, 6'7"

- Drill holes on flush plate.

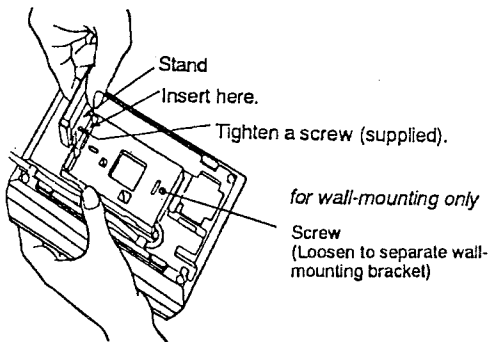
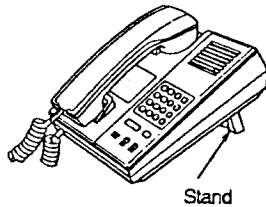


- Connect wires on DR-A base



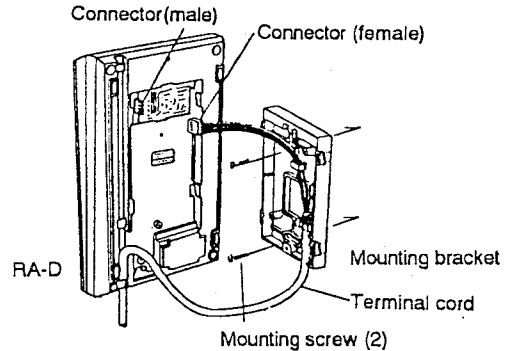
RA-D & RA-A are primarily designed for desk-top use, but can be mounted to wall or single-gang box.

■ Mounting RA-D



For wall-mounting;

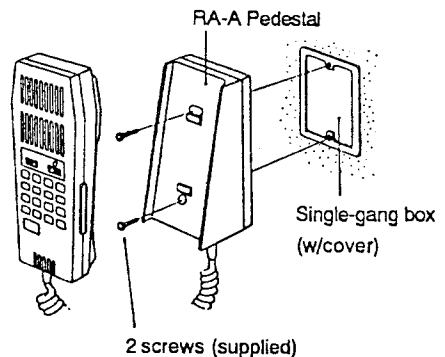
1. Unscrew on the back of RA-D.
2. Slide down the mounting bracket off the case. Unplug 4-pin connector.
3. Mount the bracket on wall or single-gang box.
4. Replug in and pull down the RA-D until it locks.



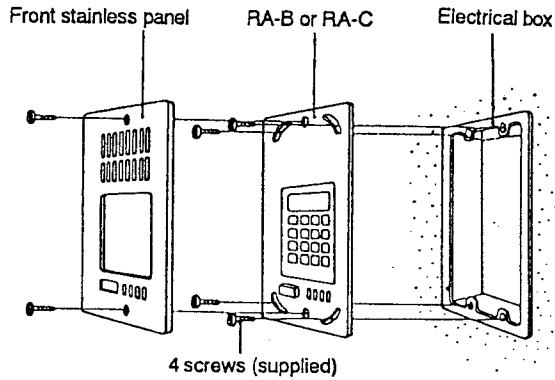
■ Mounting RA-A

For wall-mounting;

1. Loosen two screws on the Pedestal.
2. Reversely mount the Pedestal to box.



4. MOUNTING



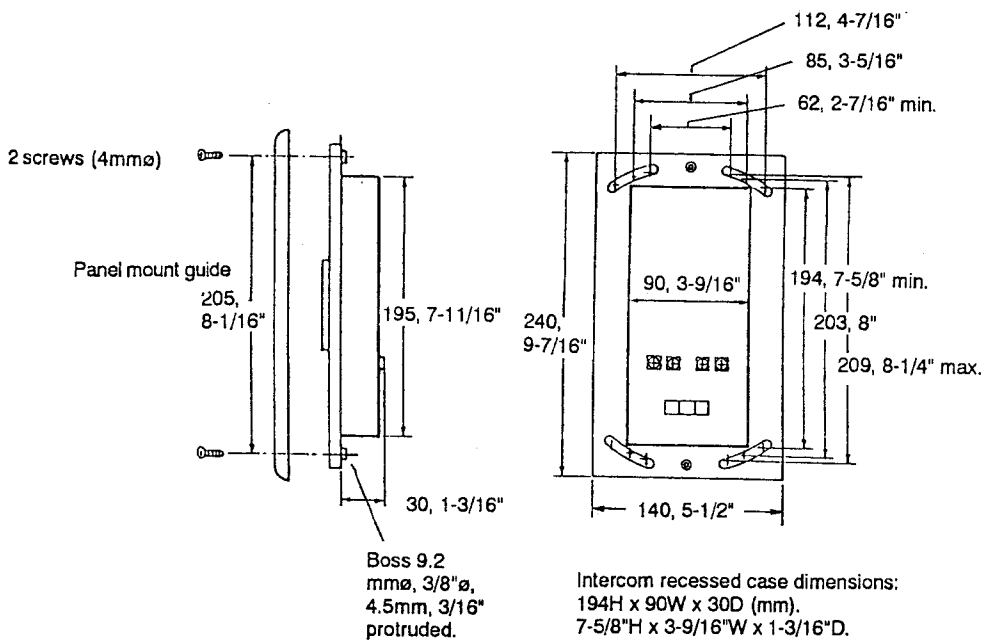
■ RA-B & RA-C Flush-mounting

- **For mounting to box**

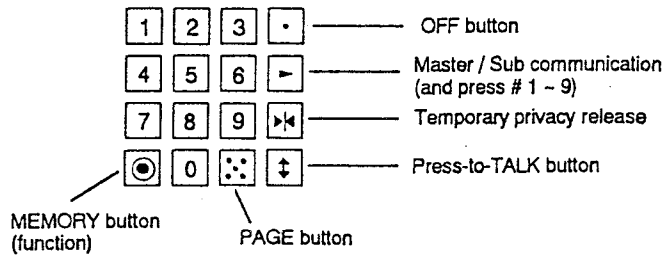
1. Loosen two screws on front stainless panel.
2. Mount the RA-B or RA-C to box.
3. Remount the front panel to the intercom.

- **For mounting to wall**

1. Cut and open a hole to flush mount the recessed case, referring to the drawing below.
2. The intercom has two bosses for the panel mounting screws. Since the boss protrudes 4.5mm, 3/16", open two holes for the bosses.



5 OPERATIONS



■ Communication

RA-A & RA-D stations are capable of effecting either of the following communications;

1. Total handsfree at both stations (in quiet office environment).
2. Handset simultaneous communication (in open office environment)
3. Press-to-talk communication (in noisy or large environment)

RA-B & RA-C are for open voice communication only.

In press-to-talk mode, RA-A or RA-D can return to handset or handsfree communication by pressing twice MEMORY button.

Note: Lift handset at initiating a call or in the midst of communication.

■ Placing a Call

1. Dial a station # with dial buttons.
2. Upon a short tone heard, the talk channel is established.
3. Communicate handsfree, both ways (slow voice-actuated).
4. At conclusion, press OFF button.

Note: Press 2 or 3 digit station # with inter-digit pause of not more than 4 seconds. Otherwise, the call becomes ineffective.

Your operation may vary according to the status of called station;

■ When quick low Intermittent (busy) tone is heard;

Press OFF button. Call later. OR Press MEMORY button. You will be connected upon present conversation finished (Camp-on Busy).

■ To break in on communication;



Press button to send a tone signal. Hold down TALK button and send a voice message. The called station: Press MEMORY button to place the present line on hold. Reply handsfree. After communication, return to the initial communication.

■ When slower high Intermittent tone (Privacy) is heard;


The station is set for Privacy mode, and will be signalled by tone for 4 seconds. The called station may either press PRIVACY RELEASE button to reply handsfree, or simply pick up handset for immediate connection. Upon finished, the station returns to Privacy mode.

Your operation may vary according to the status of called station;

■ **When quick high intermittent tone (absence) tone is heard;**

The station is set for Absence memory. Press either  OFF button or  MEMEORY button to leave a request for call back.



■ **When slow and low intermittent tone (network busy) tone is heard;**

All the channels are being used. Press  OFF button.




■ **Memory button functions**

During communication;


■ **Call Holding**



Press  MEMORY button to place the present line on hold.
To return, press  OFF button.

■ **Call Transfer**

Press  MEMORY button. Dial the station #.
Upon the line connected, tell the call is being transferred.
Press  MEMORY button to effect.
Note: When there is no reply, press  OFF button to cancel.


■ **Secretary Transfer (Station transfer)**

In standby mode, press  MEMORY button.
Dial the station # to temporarily designate the station as secretary.
Every call to your station will be automatically routed to the secretary station.


* *On your station, call-in LED blinks. Press  MEMORY,  buttons to clear.*

■ **Master/Sub connection**

At master station;

Press one-touch call  button, and a number 1 - 9 button.

At RA-C sub station;

Simply press one-touch call  button.

Press OFF button to finish at master or sub station.

■ **When music source is connected**

On your station;

Dial your own station # to turn on music.

To cancel, press the station # again.

When other station calls in, music is muted.

If secretary transfer or absence memory is set on your station, music is cut off until returns to normal operation.

5 OPERATIONS

■ Conference Call

1. Initiator station presses a station # and **PAGE** button.
2. Repeat process up to 5 stations.
3. Depress and hold down **TALK** button, and begin speaking.
4. Respondant holds down **TALK** button to speak.
5. To get out of the Conference, participants press **OFF** button or hang up.
6. At conclusion, initiator presses **OFF** button or hang up.

■ Absence Memory

1. Before you leave your desk, press **MEMORY**, **M** buttons.
2. When other station has pressed **MEMORY** button for call back, call-in LED starts blinking on your station.
3. Upon your return, press **MEMORY** button. You're connected to a first caller (in the order of youngest number).
4. After concluding with **OFF** button, press **MEMORY** button.
5. Repeat process until red LED goes out.
6. To cancel Absence memory; Press **MEMORY**, **0** buttons.

■ Camp-on Absence

When quick and high intermittent is heard upon dialed, press **MEMORY** button to leave a request for call back.

■ Memory Clear

To erase all memory functions present, press **MEMORY**, **0** buttons. i.e. Memory functions: Camp-on busy, Secretary transfer, Camp-on absence, Absence memory, except Privacy.

■ Group Call

1. Press **PAGE**, Group # (5 - 8) buttons.
*Press **PAGE** button again for call back.*
2. Announce through station speakers of one group, holding down **TALK** button.
3. **Within 40 seconds**, paged person at the nearest station of the group, presses **5**, **PAGE** buttons.
4. At conclusion, press **OFF** button.

■ All Call

1. Press **PAGE**, **0** buttons.
*Press **PAGE** button again for call back.*
2. Announce through all station speakers, holding down **TALK** button.
3. Press **5**, **PAGE** buttons to reply at the nearest station within 40 seconds.
4. At conclusion, press **OFF** button.

Paging

■ Zone Page

1. Press **PAGE** button, zone # (1 - 4) buttons.
*Press **PAGE** button again for call back.*
2. Page holding down **TALK** button.
3. Paged person presses **6**, **PAGE** buttons at nearest station.
4. To conclude, press **OFF** button.

■ Zone Talkback Page

1. Press **PAGE**, zone # (1 - 4) buttons.
2. Page holding down **TALK** button.
3. Release **TALK** button to listen.
4. To conclude, press **OFF** button.

■ All Page

1. Press **PAGE**, **9** buttons.
*Press **PAGE** button again for call back.*
2. Page holding down **TALK** button.
3. Paged person presses **6**, **PAGE** buttons at the nearest station.
4. To conclude, press **OFF** button.

Note: Talkback is not available in All Page mode.

6 TECHNICAL PRECAUTIONS

■ Post Installation System Testing

Once installation is finished, testing is recommended prior to indoctrination of user personnel regarding operation of the system. Proper installation of the RCX system, and its full range of communication functions, can be tested with three simple steps.

Step 1: Checking Station-to-Station Communication

- Select one station as key station. Label is "S-1". Label remaining stations "S-2" through "S-n".
- Call S-2 from S-1 and realize communication.
- Call S-1 from S-2 and realize communication.
- Repeat process from S-1 to S-n until each station in the system has been tested.

Step 2: Checking Busy Tone Signal

- Using three stations (S-1, S-2 and S-3), call S-1 from S-2.
- while S-2 is calling S-1, call S-2 from S-3 to confirm that Busy tone signal is heard.

Step 3: Checking Paging Function (if applicable)

Using S-1, page each zone (press **☒** and 1, 2, 3 or 4), then depress **☑** TALK button to confirm paging is transmitted to selected zone. (If talkback function is included, release **☑** TALK button to confirm talkback). To check remote control operation, press **☒** and zone number button connected to the external devices, and momentarily depress **☑** TALK button in handset. Depress **0** button to confirm either continuous or intermittent tone. Upon completion of the above tests, if any of the remaining communication functions are found not to work as prescribed in the Operation Manual, the cause is not due to improper installation. Rather, the Central Exchange Unit must be checked. If this is the case, an Aiphone Specialist must be consulted.

■ User Indoctrination

Upon completion of post installation testing and confirmation of the system being fully operable, user personnel should be indoctrinated as to how to use the system. The Operation Manual clearly describes all of the communication features of the system. A complete understanding of the operation of the system by those who will be using it will avoid post installation call backs and related service.

Special Instructions;

- (1) Turn on the power switch on the RCX-CEU/B after all the equipment wiring is completed.
- (2) Do not make temporary operation of turning ON and OFF power switch again and again. At least **3 seconds** have to elapse between ON and OFF operations.

■ Servicing

1. Be sure to turn off power switch on the RCX-CEU/B before you remove the cover of the Central Exchange Unit.
2. Removing the cover of the Central Exchange Unit will automatically activate the cutoff switch, shutting off the power. When the system has to be powered for testing, the automatic cutoff switch must be in a depressed position.
3. As the printed circuit boards in the Central Exchange Unit employs MOS-ICs, do not touch the printed circuit boards. Doing so may damage the printed circuit boards with static electricity discharged from your fingers.
4. Before removing the printed circuit board: **XC-092** Station Card, wait until all three LED's go out on the Mother board **XC-095** (RCX-88 & RCX-128CEU/B) or **XC-097** (RCX-48CEU/B) after the power is off.
5. Before replacing any station, be sure to turn off the power supply.
6. When your RCX system includes paging amplifier(s) or remote control devices, turning on and off will cause noise through paging speakers and switchover of the remote control ON/OFF mode of the remote control devices. This is not due to equipment failure but occurs when the power supply is turned on or off.
7. When replacing Cards, locate the Card in the right position by matching the Card number with that on the chassis.

■ Trouble Shooting Guide

• Look for a line open

Trouble modes	The lines of the below terminals are disconnected.						
	1 and 2	1 or 2	3 and 4	3 or 4	1 and 3 (1 and 4)	2 and 4 (2 and 3)	1,2, 3 and 4
No LED is lit.	•		•				
No dial tone.	•		•				
Cannot call.	•	Note 1	•		Note 3	Note 3	
Cannot be called.	•		•				
Cannot communicate.	•	Receiving is only possible.	•	Note 2	Note 2		
Cannot end communication.	•		•				

Notes;

1. Can call, but dialing phase is reversed.
2. Cannot communicate if incoming voice level is high.
3. With higher volume, cannot call. → Dialing phase is reversed.

6. TECHNICAL PRECAUTIONS

• Look for a line shorted

Trouble modes	The lines of the below terminals are shorted.						
	1 and 2	1 or 2	3 and 4	3 or 4	1 and 3 (1 and 4)	2 and 4 (2 and 3)	1, 2, 3 and 4
No LED is lit.		—		—	•	•	•
No dial tone.	•	—		—	•	•	•
Cannot call.	•	—		—	•	•	•
Cannot be called.		—	•	—	•	•	•
Cannot communicate.	Can receive only.	—	Can transmit only.	—	•	•	•
Cannot end communication		—		—	•	•	•

• Look for Wire Crossed

Trouble modes	The lines of the below terminals are crossed.					
	1 and 2	1 and 3	1 and 4	2 and 3	2 and 4	1 and 3, 2 and 4
No LED is lit.		•	•	•	•	•
No dial tone.		•	•	•	•	•
Cannot call.	Note 1	•	•	•	•	•
Cannot be called.		•	•	•	•	•
Cannot communicate.		•	•	•	•	•
Cannot end communication		•	•	•	•	•

Note; 1. Can call, but dialing phase is reversed.

7 SPECIFICATIONS

■ RCX-48CEU/B, RCX-88CEU/B & RCX-128CEU/B;

- Power source: AC 110 - 125V, 50/60Hz. or
AC 220 - 240V, 50/60Hz.

⚠ On each RCX-CEU/B unit, power input voltage and consumption are clearly indicated. Strictly observe that the RCX-CEU/B be fed power from the right power source in each area, otherwise it can cause fire or damage to the RCX-CEU/B unit.

- Power consumption:
 - AC 110 - 125V, 50/60Hz.
RCX-48CEU/B: Max. 70W. 30W in standby.
RCX-88CEU/B: Max. 125W. 45W in standby.
RCX-128CEU/B: Max. 155W. 55W in standby.
 - AC 220 - 240V, 50/60Hz.
RCX-48CEU/B: Max. 85W. 40W in standby.
RCX-88CEU/B: Max. 135W. 55W in standby.
RCX-128CEU/B: Max. 165W. 65W in standby.
- Station capacity: 48 stations (RCX-48CEU/B w/six XC-092).
88 stations (RCX-88CEU/B w/eleven XC-092).
128 stations (RCX-128CEU/B w/sixteen XC-092).
- Talk channels: 4 channels standard (plus 4 or 8 ch. w/one or two XC-091).
8 channels standard (plus 4 or 8 ch. w/one or two XC-091).
12 channels standard (plus 4 or 8 ch. w/one or two XC-091).
- Dialing: Mono Frequency- duty modulation.
- Line scanning: Voltage level detection by time sharing.
- Internal network: PAM time sharing multi-network.
- Line impedance: 600Ω for transmission.
220Ω for reception.
- Permitted line resistance: 220Ω (loop).
- Wiring: 2 twisted pairs home run, RCX CEU/B to each station:
RA-A, RA-D, RA-B & RA-C.
3 wires, RCX CEU/B to MC-A/A
- Ambient temperature: 0°C ~ +40°C (+32°F ~ +104°F)
- Ambient humidity: Under 80% (yearly average)
- Mounting: Wall-mount with terminals block & power supply unit.

■ RA-D Speaker-phone or RA-A Open voice or handset

- Power source: DC 24V, supplied by RCX-CEU/B.
- Current consumption: DC 10mA max.
- Communication: Voice-actuated handsfree, handset simultaneous or press-to-talk
- Call signal: Pretone & call-in LED lit
- Calling: 2 numbers dial (10 to 57) or 3 numbers dial (100 to 227)
- Station key : 16 touch keys
- Mounting: Desk or wall-mount.

■ RA-B Open voice flush-mount

- Power source: DC 24V, supplied by RCX-CEU/B.
- Current consumption: DC 10mA max.
- Communication: Voice-actuated handsfree or press-to-talk
- Call signal: Pretone & call-in LED lit.
- Calling: 2 numbers dial (10 to 57) or 3 numbers dial (100 to 227)
- Mounting: Flush-mount to wall, with stainless steel panel.

7 SPECIFICATIONS

■ RA-C Open voice flush-mount Sub

- Power source: DC 24V, supplied by RCX-CEU/B.
- Current consumption: DC 10mA max.
- Call signal: Pretone & call-in LED lit.
- Calling: One-touch CALL button.
- Communication: Voice-actuated, handsfree.
- Mounting: Flush-mount to wall, with stainless steel panel.

■ MC-A/A

- Power source: DC 24V, supplied by RCX-CEU/B.
- Current consumption: 50mA max. (paging).
20mA max. (standby).

■ PB-YKX

- Power source: DC 24V, supplied by RCX-CEU/B.
- Current consumption: 40mA max. (talkback paging)
2mA (standby).

■ Permitted line distance

	0.5mmø	0.65mmø	0.8mmø
RCX-CEU/B to Intercom	1,170m	2,000m	3,000m
RCX-CEU/B to MC-A/A	90m	150m	230m
RCX-CEU/B to PB-YKX	530m	890m	1,350m

	24AWG	22AWG	20AWG
RCX-CEU/B to Intercom	3,800'	6,500'	9,800'
RCX-CEU/B to MC-A/A	300'	500'	800'
RCX-CEU/B to PB-YKX	1,800'	3,000'	4,500'

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