Community Dial Systems - CX-10, 36-A-1 and 36-A-3 Types for Use in Small Installations - Pole or Floor Type Mounting.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

195 BROADWAY NEW YORK

EXCHANGE 3-9800

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June 2, 1938

P.E.C. 818

This is to advise that small 9 and 19-line community dial equipment units suitable for either pole or floor type mounting have been made available for use in the smaller community dial office areas. These equipments are coded CX-10, 36-A-1 and 36-A-3.

The CX-10 is an all-relay equipment manufactured by the North Electric Manufacturing Company and has a normal capacity of nine lines, two links and one trunk. The 36-A-1 and 36-A-3 equipments, which are manufactured by the Automatic Electric Company, use rotary line switches for their switching mechanism. The 36-A-1 has a capacity of 19 lines, four links and three trunks, while the capacity of the 36-A-3 is nine lines, two links and two trunks. These equipments are more fully described in the attached sets of notes.

As mentioned above, these equipments are suitable for either pole or floor mounting. It is believed that the floor mounting arrangement will be found more suitable in practically all cases since provision can be made more conveniently for the switchboard and other equipment which may ultimately be required, such as phantom composite signaling equipment, which mounts external to these units on small relay racks. Also, suitable protection against climatic conditions can be more readily made with the equipment located in a building.

Price and delivery schedules for the above arrangements can be secured for specific cases from the Western Electric Company.

We should be glad to discuss any questions which may arise regarding the application in your area of small community dial office equipments described herein.

Attached:
Notes:
CX-10 Community Dial Office.
36A1 Community Dial Office.
36A3 Community Dial Office.

Yours very truly,

H. P. Charlesworth

Assistant Chief Engineer.

To all Chief Engineers
(Copies included for General Traffic and Plant Managers.)

From Monken 11-21-39

Type CX-10 Community Dial

	Price Each
CX-10 Initial frame, interior mounting, arranged for 10 lines and 3 links with 10 party code ringing equipped with 10 lines, 2 links, rotary time clock, busy and dial tone, 10 party code interrupter, and power panel	$ 615.00
CX-10 Initial frame, same as above except arranged for 20 party code ringing	625.00
Link, 10 party metallic, with line finder and connector multiple	139.00
Link, 20 party metallic, with line finder and connector multiple	143.00
Battery charger, 1 ampere, non-regulating type	45.50
Mounting bracket for 10 W.E. 1269A Protectors equipped with one 26 pair terminal block	10.75
Trunk, 2 way dial repeater, from connector - less W.E. Co. repeating coil	41.00
Trunk, 2 way to manual, loop dialing extended range from connector - less W.E. Co. repeating coil	28.75

6/5
2588
680

615

NOTES

PEC-818

BELL TELEPHONE LABORATORIES, INC.

CX-10 COMMUNITY DIAL OFFICE

PRINTED IN U.S.A.

NOTES

CX-10 COMMUNITY DIAL OFFICE

These notes describe briefly the 9-line CX-10 community dial office manufactured by the North Electric Manufacturing Company.

GENERAL DESCRIPTION

This community dial office is of the all-relay type, with two casing arrangements, one for interior use and the other for mounting on a pole fixture.

In general, this equipment is similar to the other CX-type all-relay switchboards now available, but has a reduced capacity and a smaller frame size, and some features have been eliminated.

CAPACITY AND CLASSES OF SERVICE

The CX-10 is normally equipped for 9 subscriber lines, 2 links and one trunk. The switch frame has capacity, however, for one additional link and one additional trunk which may be equipped on a special basis. When the additional trunk is equipped, only 8 line circuits are available for subscriber lines.

A maximum of two coin box lines and two ground return lines may be equipped.

Link circuits and the code interrupters may be provided for a maximum of either 10 or 20 ringing codes.

The switchboard is wired as specified for either bridged ringing or divided ringing on multi-party lines.

Provision is made for the following classes of service on a terminal per line basis:

A. Metallic Lines

1. Individual
2. Two party full selective
3. Four party semi-selective
4. Ten party bridged or divided ringing
5. Twenty party divided ringing (20-code system only) (A maximum of 15 stations may be operated on a bridged ringing line)
6. Post payment coin box

B. Ground Return Lines

1. Code ringing - ten station maximum
2. Code ringing - fifteen stations maximum (20-code system only)

NUMBERING

All subscribers' numbers have three digits. In the ten-code system the first digit is "5", the second digit is the line number, and the third digit indicates the ringing code. In the twenty code system the first digit is "5" or "6", indicating respectively the first or second set of ten ringing codes, the second digit is the line number, and the third digit indicates the ringing code.

The digit "0" is used for a trunk code. If two trunks are used, an automatic trunk selection feature is provided.

RINGING CODES

The ringing codes are as follows:

Ringing Code No. (Final digit)	Side of Line	Code Ringing Signal	
		First Set (Prefix "5")	Second Set (Prefix "6")
1	Ring	1 long	1 short 1 long
2	Tip	2 shorts	3 shorts
3	Ring	4 shorts	5 shorts
4	Tip	2 longs	1 short 2 longs
5	Ring	2 longs 1 short	1 short 2 longs 1 short
6	Tip	2 shorts 1 long	3 shorts 1 long
7	Ring	2 shorts 1 long 1 short	3 shorts 1 long 1 short
8	Tip	1 long 1 short	1 short 1 long 1 short
9	Ring	1 long 2 shorts	1 short 1 long 2 shorts
0	Tip	1 long 3 shorts	1 short 1 long 3 shorts

TRUNKS TO OTHER OFFICES

Trunk circuits are available to connect CX-10 offices to standard terminations on all Bell System manual, toll and DSA switchboards, and to other CX-type offices. Trunk circuits for connecting to other types of dial offices will be provided when required.

Both incoming and outgoing trunk calls require a link for completion. Each trunk circuit is associated with a line circuit, line number "0" being used for the first trunk and "9" for the second trunk if that trunk is equipped.

COIN BOX SERVICE

Two types of coin box service are available:

(1) Post-pay service with collection on local calls

Any line number may be used for this service. An auxiliary line circuit associated with each coin line splits the connection on local calls when the called party answers and sends a deposit tone to the calling party at the same time. The calling party then deposits a coin in order to talk. On calls to a manual office no deposit is required to talk to the operator. The operator hears a coin line identifying tone on answering this type of call.

The auxiliary line circuits are mounted on the switch frame and connected at the factory.

The W. E. Co. 163A coin collector, or its equivalent, is used at the coin station for this type of service.

(2) Post-pay service without collection on local calls

Any line number may be used for this service. A simple auxiliary line circuit is associated with each of these lines to provide the coin line identifying tone which the operator hears when answering a call from one of these lines.

The auxiliary line circuits are mounted on the switch frame and connected at the factory.

The W. E. Co. 162A coin collector equipped with a dial, or an equivalent combination, is used at the coin station for this type of service.

GROUND RETURN LINES

Any line number may be used for operation with ground return lines. An auxiliary line circuit is required for each of these lines and is installed on the switch frame and connected at the factory.

GENERAL OPERATION

Dial tone, busy tone, machine ringing and ring-back tone are provided. Preliminary pulses are absorbed. Machine ringing is tripped only during the long silent interval following the completion of all the elements of a code.

REVERTING CALLS

On reverting calls the directory number of the called party is dialed. The calling party receives busy tone and hangs up and the link circuit then rings all bells on the line with the code of the called party. This applies to both bridged and divided ringing lines.

On answer of the called party the link circuit releases and the line circuit holds the line in a locked out condition and supplies talking battery.

LINE LOCKOUT

The timing equipment automatically releases a link after a two to four minute delay in case of a permanent signal, incompletely dialed condition, "don't answer", or failure of the calling party to disconnect after the conversation. The calling line is then "locked out" by the line circuit until hangup or until any line trouble is cleared.

RADIO FREQUENCY SUPPRESSION

Radio frequency suppressors are provided at the more important sources of disturbance. When local conditions necessitate the provision of special filters for further suppression, standard Bell System apparatus may be applied in the field.

OPERATING RANGES

This equipment will operate with lines having a maximum conductor loop resistance of 1000 ohms with a 5000 ohm minimum leak from each side of the line to ground or a 12,000 ohm minimum bridged leak.

TEST FACILITIES AND TRAFFIC REGISTERS

No alarm checking terminal is provided. The line testing facilities ordinarily provided on the power panel of the larger CX-type offices are not provided with the CX-10 office. Traffic registers are not provided as standard equipment.

PROTECTORS AND DISTRIBUTING FRAME

A bracket is provided for mounting a strip of Western Electric Co. 1269A protectors. A 26-pair terminal block is mounted on this bracket for terminating outside plant conductors for cross connection to the protectors. This bracket is mounted on the outside of the switchboard frame in the case of the interior type arrangement. In the case of the pole mounting arrangement, this bracket is located inside the cabinet.

The protectors should be ordered separately as they are not furnished with the switchboard. The line cable for terminating the protectors is furnished and is factory connected at the switchboard end.

POWER AND SIGNALING EQUIPMENT

The power equipment consists essentially of a storage battery and a battery charger.

The storage battery and accessories are not furnished as part of the switchboard and should be ordered as separate items.

Either 15 A.H. or 30 A.H. storage batteries per KS-5361 or their equivalent should be ordered. Twenty-four cells are required. The 15 A.H. size will usually be adequate. Where conditions require an unusually long reserve the 30 A.H. size may be required.

Two types of battery chargers are available. The first is a one-ampere, copper oxide, trickle charge type which will ordinarily be satisfactory; the other is a two-ampere, copper oxide, self-regulating type which may be employed where the power service is not reliable or where load variations are of such a nature that correct trickle charge operation is difficult.

The tone generating and ringing code interrupter equipment is of the all-relay type. A vibrating type ringing current generator is provided.

Two types of timers are available optionally, one a 60-cycle type operating on commercial A.C. which will be supplied as standard, and the other a relay type operated from the local storage battery, and supplied on a special basis when ordered.

EQUIPMENT ARRANGEMENTS

The switching equipment for the interior type office is mounted on a single frame equipped with a casing 12" deep, 36" wide and 54" high. The power equipment is mounted on this frame, with the exception of the battery which is mounted on a frame of open shelves about 16" wide and located at the end of the switch frame.

For the pole mounted arrangement all of the equipment is enclosed in a weatherproof cabinet about 15" deep, 40" wide and 80" high. The batteries are located in this cabinet in a separate compartment below the switching equipment.

Both the front and rear of the pole mounting cabinet are equipped with a drop leaf which may be raised when the doors are opened. This leaf in combination with the opened doors forms a port for protection from rain or snow if it is necessary to open the cabinet during inclement weather.

WEIGHTS

The approximate weight of a fully equipped CX-10 switchboard, not including the storage batteries, is 450 pounds for the interior type and 950 pounds for the pole mounting type.

INSTALLATION

The installation work consists principally of placing the switch frame and battery rack, placing and connecting the storage batteries, mounting the protectors, connecting the switchboard to the office ground, connecting the cable between the protectors and the switchboard at the protector end, terminating the outside plant conductors, cross-connecting the lines, connecting the battery charger to the local power supply and making simple operating tests.

ORDERING INFORMATION

When ordering one of these offices specify:

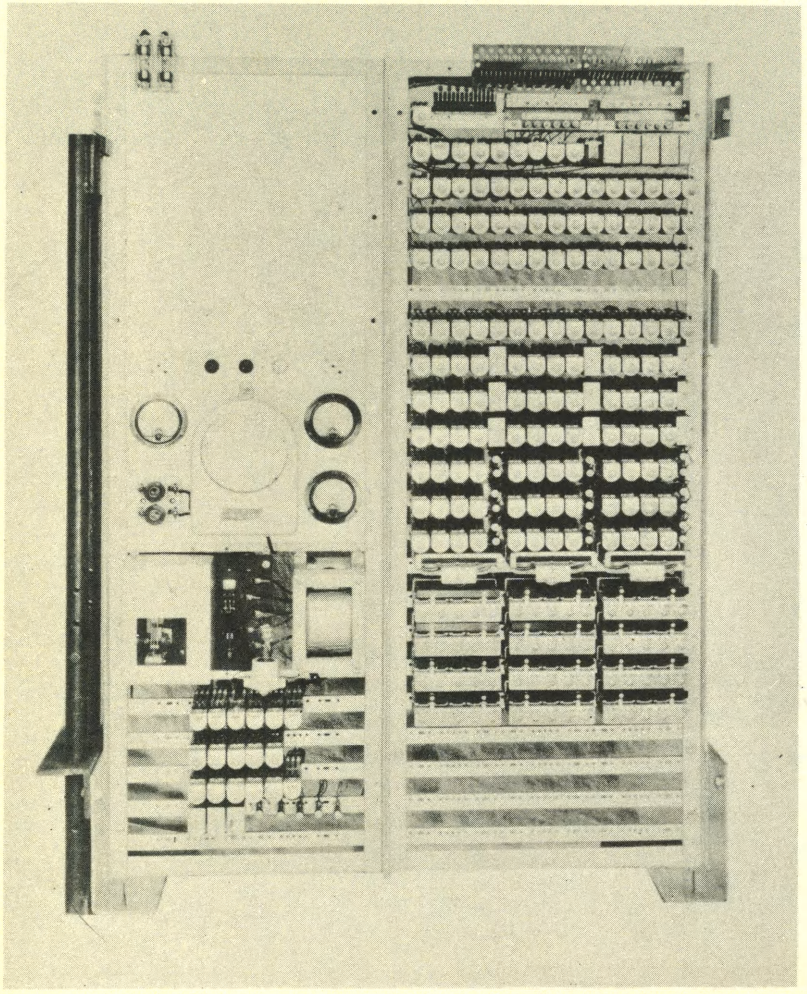
North CX-10 Community Dial Office
Interior or pole mounted arrangement
Quantity of links (2 or 3)
Ten or twenty ringing codes
Bridged or divided ringing on multi-party lines
Quantity of trunks required
Type of distant office in which trunks terminate

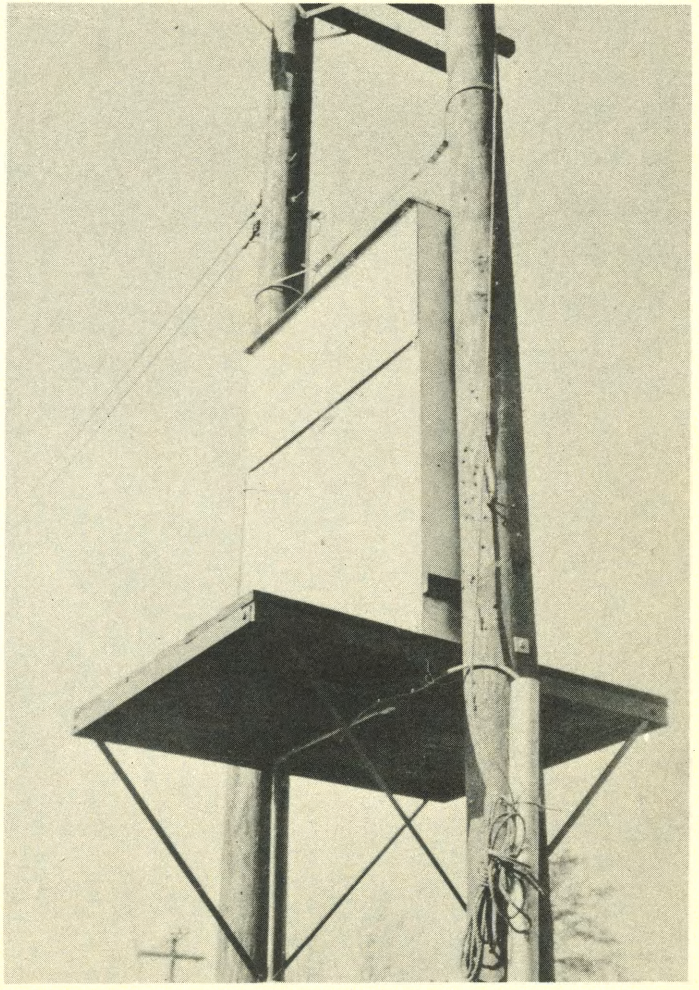
Approximate resistance of trunk conductors
Quantity and type of coin box lines and line circuit numbers to be associated
Quantity of grounded line auxiliaries and line circuit numbers to be associated
Type of battery charger desired
Sixty-cycle or relay type timer
Voltage and frequency of power supply

Order separately and in detail:

Storage batteries and accessories
Protectors
Power wire and sundries for connecting rectifier to power supply
Wire and sundries for connecting switchboard to office ground

Attached:
Photograph.





Left - CX-10 Community Dial Switchboard without casing.
May be equipped with either an interior or pole mounting type of casing.

Right - Typical pole mounted CX-10 installation.