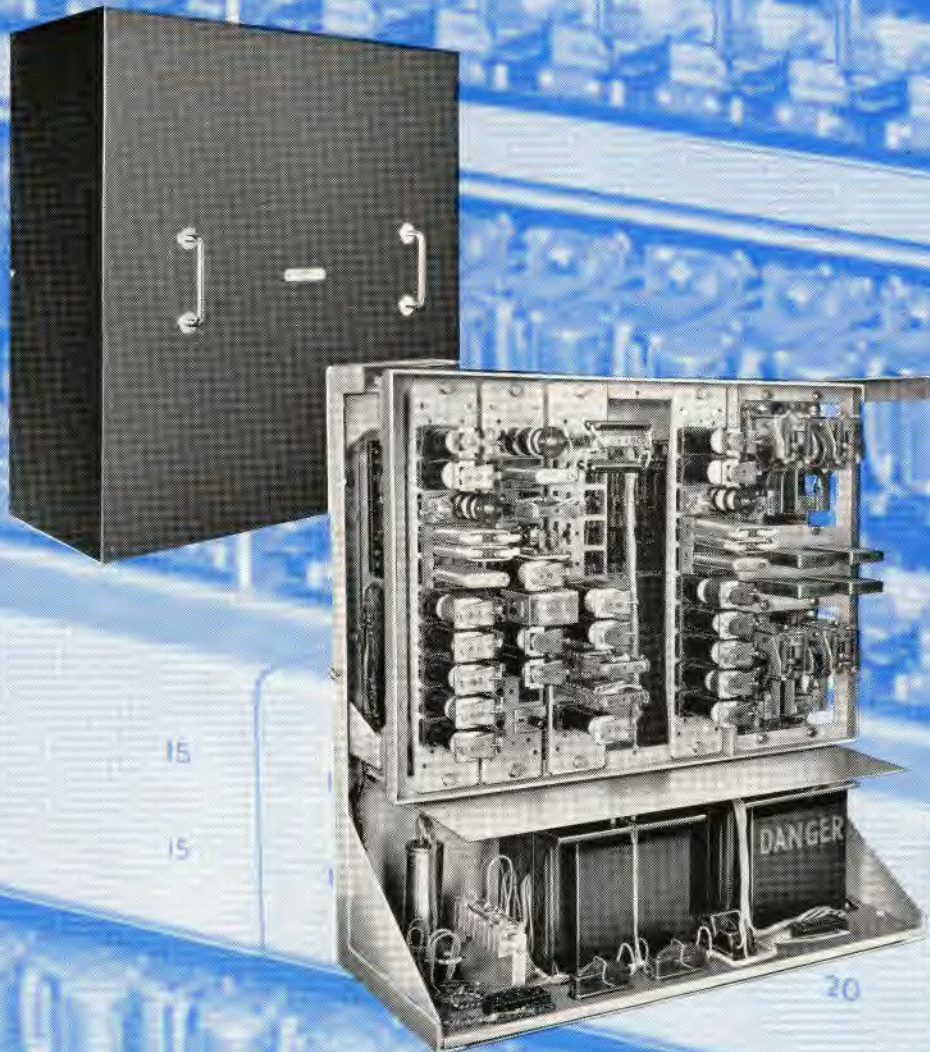




15-LINE

PRIVATE AUTOMATIC TELEPHONE EXCHANGE



15-LINE PRIVATE AUTOMATIC TELEPHONE EXCHANGE RAPID AND SECRET AUTOMATIC INTERCOMMUNICATION

The G.E.C. 15-line private automatic telephone exchange provides rapid and secret intercommunication by the simple dialling of two digits. It is invaluable in large and small businesses to provide automatic inter-connection between members of the staff. The exchange is essentially designed for internal communication only, but by means of the G.E.C. exchange line switching telephone, it can be connected to up to four lines from a public exchange. It employs the same apparatus that has been standardised for large public exchanges by many Overseas Governments and the British Post Office.

The numbering scheme is 2-9 and 01-07. Through circuits for conversation are established by connecting links, of which there are two permitting two simultaneous conversations.

The exchange, which is arranged for either table or wall mounting, is contained in a dust-proof steel cabinet. The standard cabinet is finished furniture green, but other colours can be supplied to special order. A complete system consists of the exchange unit which includes a power unit, the telephones, the connexions from the telephones to the exchange and possibly a distribution frame and protection apparatus.

STANDARD FEATURES: FULL INTERCOMMUNICATION

Every extension user can dial any other; a maximum of two simultaneous conversations can be held.

NO OPERATOR REQUIRED

The operation of the system is fully automatic and needs no manual supervision.

SECRECY

Absolute secrecy of each conversation is ensured by the use of circuits and apparatus designed to eliminate overhearing.

EXECUTIVE RIGHT-OF-WAY

By means of this facility certain executives may exercise priority and get through to the wanted extension even though that extension may be already engaged. A pushbutton, provided on the telephone instrument, is depressed when busy tone is received. The executive is then immediately connected to the wanted party. Alternatively, the pushbutton can be dispensed with if required, by means of permanent strapping on terminals at the exchange, whereby the executive never receives busy tone and is always immediately connected to the wanted party.

TIE-LINE SERVICE

The use of an internal service is not necessarily confined to any one building; two G.E.C. P.A.X. units in buildings several miles apart can be linked by a tie-line, to permit intercommunication between extensions in both buildings. Access to the tie-line is by dialling 00.

Please state the type of P.A.X. into which the tie-lines must work and the line loop resistance of the tie-line itself. Should an existing P.A.X. be of other than G.E.C. manufacture, its circuit drawings should be provided with an enquiry.

TELEPHONE INSTRUMENTS

Any automatic telephone having a dial pulse speed of between 7 and 14 pulses per second, with a ratio of 2 to 1 *break to make*, is suitable for use with this exchange.

Recommended telephones are the "G.E.C. 706" telephone and the "G.E.C. 711" telephone described in G.E.C. leaflet Nos. STL16 and STL18. G.E.C. Loudspeaking Telephones have been designed especially for this P.A.X., and are described in leaflet STL15. The user has complete freedom of movement about the room whilst making the call.

For extensions having executive right-of-way, the telephone instruments are fitted with a special pushbutton.

LINE WIRES

Any insulated twisted pair, or open-wire conductor for external lines, may be used. Lines should be suitably protected if exposed to the risk of damp or mechanical damage. Line-loop resistance (the resistance of two wires in series) should not exceed 800 ohms. The following table gives examples of maximum lengths for various line wire conductors.

| Size of Copper Conductors | | | | Maximum permissible length | |
|---------------------------|---------|----------------|--------|----------------------------|-------|
| | lb/mile | A.W.G. (B.&S.) | S.W.G. | mm. diam. | Yards |
| 4 | 26 | 27 | 0.4 | 3168 | 2880 |
| 6½ | 24 | 25 | 0.508 | 5024 | 4576 |
| 10 | 22 | 23 | 0.64 | 7712 | 7014 |

Each extension requires a two-wire connexion to the exchange unit, unless the extension is provided with executive right-of-way facilities, when the requirement is a three-wire connexion to the exchange, with an earth (ground) connexion from the telephone.

POWER SUPPLIES

The P.A.X. includes its own 50-volt d.c. power supply unit which will operate from a 100, 110, 230, 240 or 250 volt 50 or 60 c/s a.c. mains supply.

OPTIONAL SPECIAL FEATURES TO BE SPECIFIED ON ORDER

CONFERENCE LINES

These enable conferences to take place by telephone whilst the participants remain at their desks.

The *conference facility* provides for conferences with no limit to the number of participants as no links are employed; each participant's telephone is connected to the exchange by an additional line pair and is fitted with a pushbutton. The conference is opened by each participant being individually called by the convener; each then presses the pushbutton on his instrument to give direct connexion to the conference circuit at the exchange. Please state the number of participants required.

STAFF LOCATION

Officials absent from their offices can be called by a system of lamps or bells. A special 'Locating' number is dialled from any telephone followed by digits in a personal code. Please state whether a visible or audible call is required, how many codes are needed, and the number of calling stations likely to be used.

PUBLIC EXCHANGE SERVICE

Although the exchange is intended for internal intercommunication in a private network, it can be associated with up to four lines to the main public telephone exchange by means of G.E.C. exchange line

switching telephones. Extensions having these telephones can make and receive public exchange calls. These calls can be transferred between extensions with the switching telephones.

Please state the type of public exchange into which the telephones must work and the line loop resistance of the exchange line. This information should be obtained from the local telephone Administration.

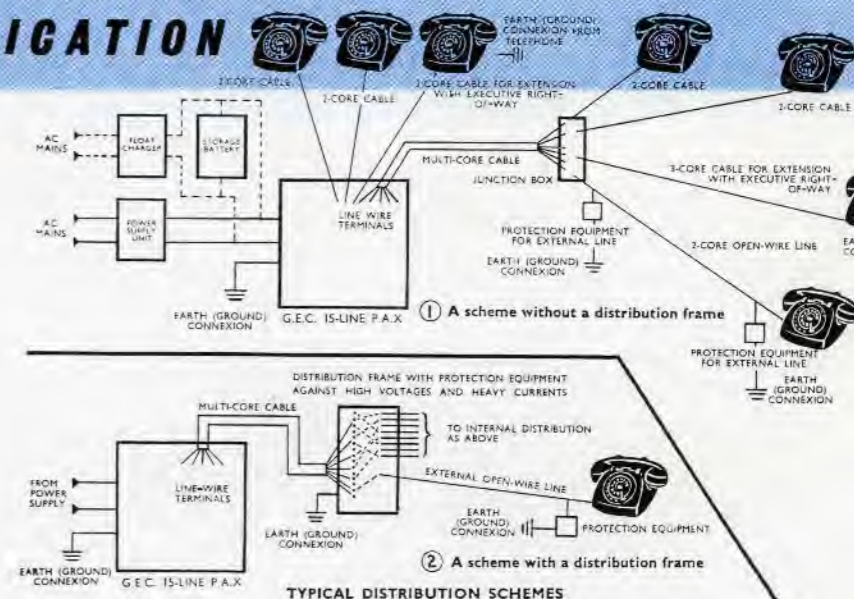
FIRE ALARM SERVICE

The exchange can be arranged to give a fire alarm service that meets the particular requirements of any organisation. For instance, by dialling a "Fire" number from any telephone, alarm signals can be made to sound at required points. Please state the facilities required, the calling system to be adopted and number of fire points. It is wise first to consult the local fire regulations.

SECRETARY'S SERVICE

A secretary can be provided with a G.E.C. secretary's switching telephone whereby she can filter all incoming calls to the executive, who is provided with a G.E.C. extension telephone. See leaflet STL17.

Direct connexion between executive and secretary is provided without the call being routed through the P.A.X.



DISTRIBUTION

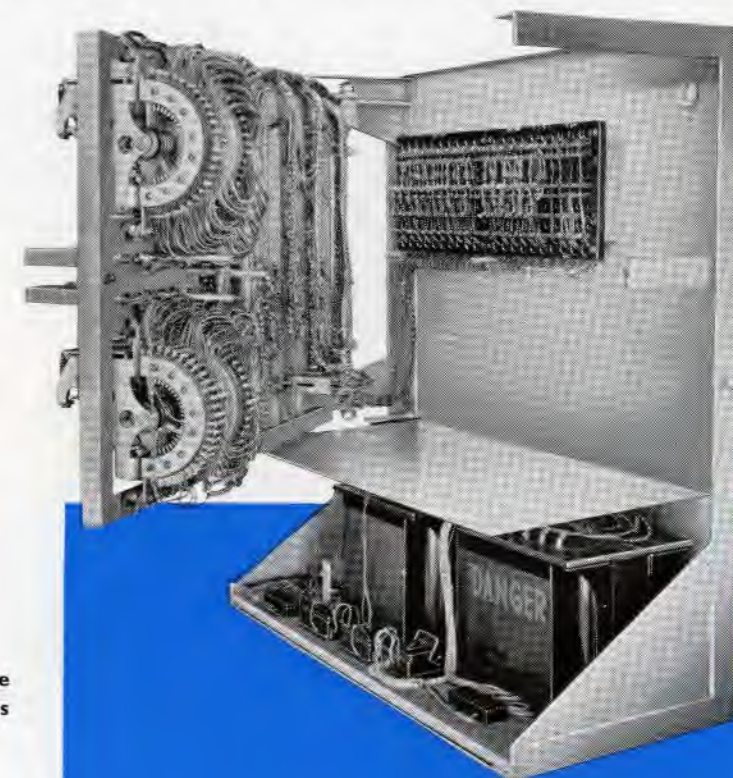
The simplest method of connecting the telephone instruments to the exchange is to use a separate line wire pair for each telephone. A saving in the cost of line wires, however, may often be effected by running a multi-core cable, 12-pair, from the exchange to a junction-box so situated that only short lengths of separate line wires are then required to connect the telephones to the junction-box.

Distribution frames on which the exchange lines are terminated, and to which the telephones are wired, are not normally used with this exchange, but can be supplied if required. The use of a distribution frame simplifies alterations to numbering schemes and line testing, and also provides protection against high voltages and heavy currents that may accidentally be introduced from extraneous sources.

As the distribution scheme must vary according to the geographical layout encountered, please state whether or not cable and junction-boxes are to be supplied; if they are, a dimensioned sketch of the disposition of the exchange unit and telephones should be included.

PROTECTION

Provided the line wires connecting each telephone to the exchange are all run inside a building, no form of protection against lightning is required. However, should any line wires be run outside the building, line-protection apparatus must be employed on each such line. Please state the number of lines to be protected; suitable protection apparatus will then be provided.



15-line P.A.X. with gate swung open to give access to apparatus.

ORDERING INFORMATION

G.E.C. 15-LINE P.A.X.

| Line Circuits | Link Circuits | Dimensions | | Weight | | Catalogue Number |
|---------------|---------------|---------------|--------------------------|--------|-----|------------------|
| | | ins | cms | lb | kgs | |
| 15 | 2 | 22½ × 21 × 9½ | 57·15 × 53·34 × 24·73 | 130 | 59 | PX 1215 |

SPECIAL FACILITIES : If any of the special facilities described in this leaflet are required, please quote details after the catalogue number of the exchange unit.

RECOMMENDED TELEPHONES

Catalogue Number

| | | |
|---|-------------|--|
| "G.E.C. 706" Telephone automatic, table model .. | TEL/10K/ATT | } The telephones listed here are fully described in Catalogue Leaflets STL13, STL16 and STL18. |
| "G.E.C. 711" Telephone automatic, wall model .. | TEL/2W/AWT | |
| "G.E.C. 706" Telephone automatic, table model with pushbutton for recall | TEL/12K/ATT | |
| "G.E.C. 1000" Telephone automatic, table model .. | TEL/10T/ATT | |
| "G.E.C. 1000" Telephone automatic, table model with pushbutton for recall | TEL/6T/ATT | |
| Secretary's Switching Telephone | TEL/10S/ATT | } Described in Catalogue Leaflet STL17 |
| Executive's Extension Telephone | TEL/10E/ATT | |
| Loudspeaking Telephone without key calling | TEL/3L/ATU | } Described in Catalogue Leaflet STL15 |
| Loudspeaking Telephone with key calling and direct access | TEL/1L/ATU | |
| Exchange Line Switching Telephone | ELS 501 | Described in Catalogue Leaflet PXL7 |

The Company reserves the right to change any detail of design

Please address all enquiries

c/o Marketing Manager, Private Systems Division Marketing Department

G.E.C. (TELECOMMUNICATIONS) LIMITED

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Telex: 31361.

Cables: Springjack, Coventry.

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