

# PHILIPS

## Private automatic branch exchange type UB49a

### General

This modern private automatic branch exchange incorporating many attractive features is especially intended for large offices or works requiring any number of extensions from about 200 up to several thousands. Because of the great degree of standardisation employed, type UB49a exchanges are easily expanded. The functional equipment units are of the plug-in-type. Continuous technical attendance is not necessary.

The dust covers of the racks, and the short movements of the selectors mean a considerable reduction of wear while maintenance is simplified by the easily interchangeable units, taking on an average only 30 minutes annually per extension. The efficiently arranged equipment requires a minimum of floor space.

### Description

The UB49a is a register system in which marking of the wanted outlet in the 100-point selector bank is followed by high-speed positioning of the wipers in one single sweep.

For a comprehensive description of this type U45 high-speed non-homing uniselector see leaflet T-62.712. The high speed (300 contacts a second) of this selector, which is used in all switching stages, permits the UB49a system to be so designed that the average waiting time for dial tone and ringing tone is limited to less than half a second. This type of selector also makes it easy to incorporate group hunting.

The register principle provides for the following extension classes: extensions for local traffic only, extensions for local traffic and indirect or direct access to the public network, and extensions for local and all exchange line traffic. The classification of any extension can be altered very simply.

The circuitry of the UB49a system permits a standard lay-out of the equipment racks and guarantees a minimum number of racks for any traffic volume up to 48 TU. The exchanges are composed of one or more 48 TU groups, each of about 500 to 600 exten-

sions, 30 to 40 exchange lines, 9 registers, 1 marker and 2 or 3 operator's positions.

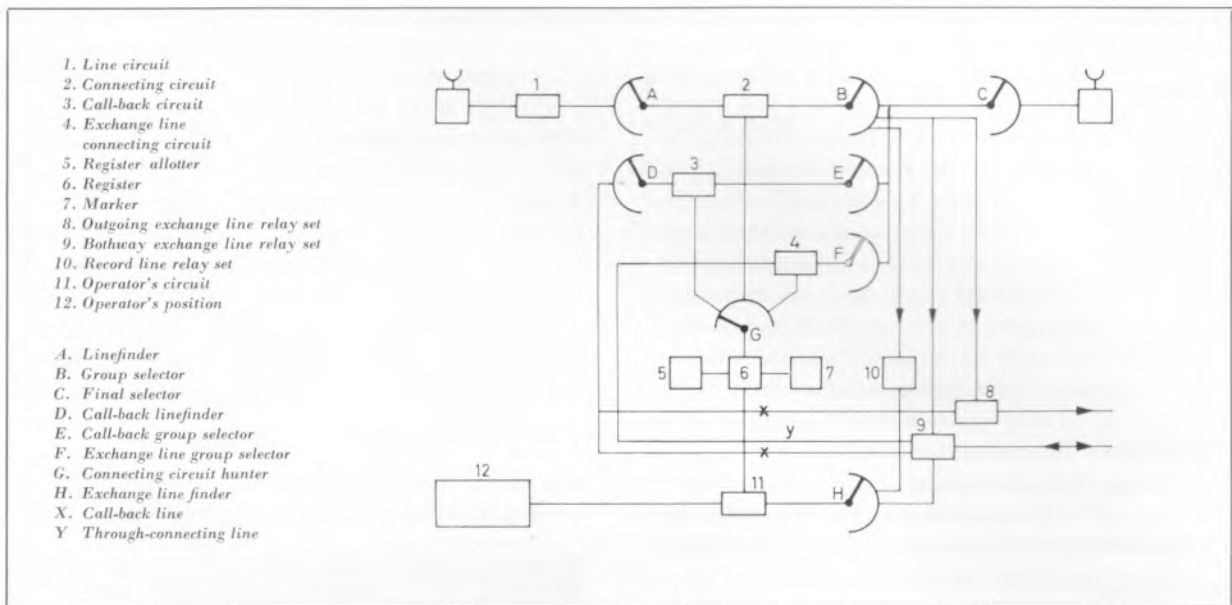
As shown on the trunking diagram separate exchange line connecting circuits with associated group selectors can be provided, e.g. in cases where a large number of exchange lines is required. Alternatively, line-finder outlets can be used for connecting call-back and through-connecting lines. Two or more exchanges can be coupled by adding tie-line relay sets.

### Operator's position

The operator's position desk or set is cordless and of very modern design. It is provided with a key-set for



division	Telecommunication
section	Private telephone exchanges
product	Private automatic branch exchange
type	UB49a
pamphlet	T-62.405

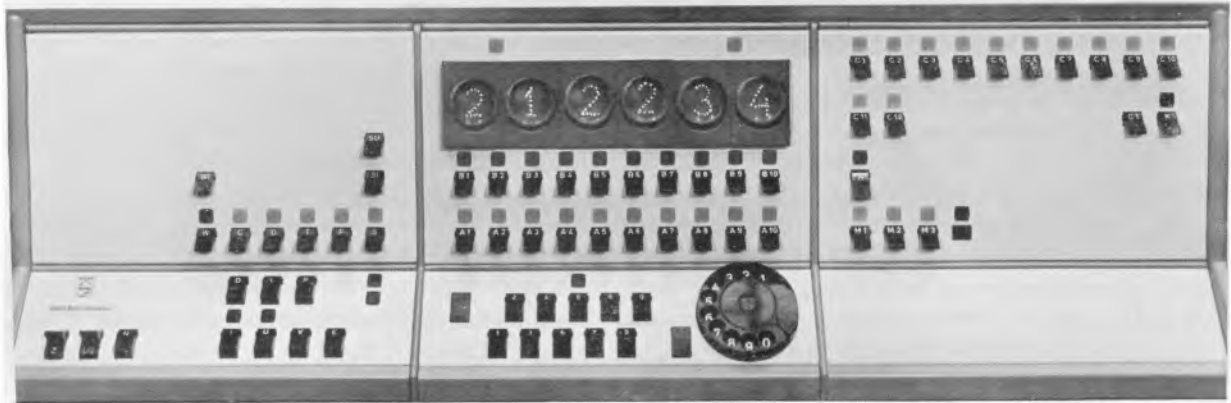


block diagram of UB-49 system

an operator's desk



rapid calling of local extensions when passing on public exchange calls. The number of positions can be increased without any modification of or addition to the existing position(s). It is possible to answer any incoming public exchange line call from any of the operators' positions. An incoming call not answered by the operator within a predetermined time gets priority over all other incoming calls. Any incoming call from the public exchange which is not answered by the called extensions within a predetermined time automatically reverts to the operator who originally handled it. The operator may enter an existing connection to announce a public call, the fact being indicated by a ticking signal. An extension can return an incoming exchange line call to the operator by pressing the earthing button on the telephone set. The position uses a minimum of signalling lamps with associated buttons. The number of indicators is equal to the number of *conditions* on exchange line connections requiring immediate operational attendance. An identification display may be mounted in the front panel of the standard operator's desk. At this display the number of the extension and/or public



detail of operator's desk with 3 groups of external lines, identification unit and conference unit

exchange line concerned are shown in illuminated figures. The desk caters for 3 groups of incoming lines (expandable to 10); each group may comprise any desired number of lines. The desk can also be equipped with buttons and lamps for every incoming line individually. The operator's position can be equipped for *blind operation*, the attention of the operator being called by a tone signal. After pressing the common answering button, the operator hears a combination of up to 3 tones indicating the condition of the call to be answered. The most urgent call automatically gets priority. The sequence of priority can be adapted to the requirement of the owner.

#### Facilities

The UB49 system offers all usual PABX facilities such as full secrecy on all calls, call-back, call transfer, immediate ringing, ring-tripping and first party release.

Other facilities can easily be added in the form of supplementary equipment units.

*The staff-locating system* employs visual and/or audible signals to inform a staff member who is not in his own room that he is wanted on the telephone.

*The preference or right-of-way service* enables executives to enter an existing connection when the called extension is found busy.

*The conference service* enables a number of designated

extensions (or exchange lines) to be interconnected in a conference circuit.

*The automatic transfer service* automatically transfers calls intended for one or more (max. 10) extensions

*these easily interchangeable units enhance the serviceability*



to another extension appointed for that purpose, if the calls are not answered within a specified time. *The direct key-calling facility* enables an executive to establish a direct connection with one out of up to 20 predetermined extensions without using a connecting circuit of the PABX.

*Key-set dialling* is an interesting optional feature, requiring supplementary registers. The conventional dial is then replaced by a pushbutton key-set, with which connections can be established considerably faster. The system allows an increased amount of traffic to be handled with the same grade of service. It also reduces station maintenance. Telephone sets with normal dial may be connected to a PABX equipped for key-set dialling.

*Telephone networks* consisting of two or more UB49a exchanges offer important advantages: uniform numbering scheme, no second dialling tone, automatic overflow and centralized operation, thus considerably reducing the number of operators' positions. The following extras can also be supplied with the UB49a: *Relay sets* for adaptation of different types of tie-lines, LB or CB lines, carrier or radio links or mobile radio equipment;

*Special devices* for control, monitoring, testing, measuring and adjustment.

*Telephone sets* equipped with a ten-digit dial or a pushbutton keyset can be supplied with an earthing button for call-back and transfer facilities.

#### ALARMS

Alarms are given in the event of faults occurring in more or less vital circuits, and if an extension user has failed to replace his handset. All alarms are given in the racks and repeated on a lamp strip near the entrance to the equipment room.

#### POWER SUPPLY

The 48 V DC power supply unit consists of a selenium rectifier and a secondary cell battery in parallel, providing a full floating system that maintains the supply of DC power even during periods of mains failure. Stabilized rectifiers are supplied for an input

(AC mains) voltage of 220 V +10% to -15% and a frequency of 50-60 c/s  $\pm$  5%. Matching transformers for other mains voltages are available.

#### Technical data

##### *Climatic conditions*

The system is fully tropicalized

##### *Nominal working voltage*

48 V DC  $\pm$  8V

##### *Permissible loop resistance (including telephone set)*

1200 ohms (for high values special relay sets are available)

##### *Leak resistance on extension loops, public exchange lines and tie lines*

min. 20 kohms between a-wire and b-wire and between a-wire or b-wire and earth

##### *Noise voltage, measured psophometrically*

less than 0.4 mV under severe test conditions

##### *Crosstalk attenuation between two local speech circuits*

better than 80 dB

##### *Crosstalk attenuation between two local exchange line speech circuits*

better than 105 dB

##### *Attenuation in a public exchange line circuit*

less than 0.8 dB on 800 c/s; less than 0.7 dB on 1000 c/s; less than 0.6 dB on 3400 c/s

##### *Insulation resistance of wiring*

more than 1000 megohms at any temperature or humidity

##### *Normal impulse ratio*

60 (open) to 40 (closed) with a speed of 7 to 12 pulses per second. The UB49a allows wide tolerances in this respect.

##### *Dimensions of equipment racks*

height 2360 mm (7 ft. 9 in.); width 719 mm (2 ft. 4 in.); depth 335 mm (1 ft. 1 in.)

##### *Weight of a fully equipped rack*

approx. 275 kg (600 lb.)

##### *Minimum headroom requirement*

2900 mm (9 ft. 6 in.)

##### *Preferred headroom requirement*

3100 mm (10 ft. 2 in.)

