

METER CONTROL EQUIPMENT (MCE)

A need exists to be able to indicate the cost of a telephone call at the subscribers end of the two-wire line circuit. This is achieved by diverting the O/G A and B legs each through one winding of a three winding 'injection' transformer. When the exchange meter is operated a burst of 50 Hz is applied to the third winding, an in-phase longitudinal signal then appears at the subscribers end; the circuit is completed by earth return. The pulse is not heard by the subscriber if the circuit is correctly balanced. Various types of detectors are used to register this transmitted meter pulse.

OLD EQUIPMENT

In Subscribers Private Meter Equipment (SPME) the circuitry is similar in TXS, TXK and TXE₄ exchanges, only the mounting practice varies. The exchange meter pulse merely operates a relay to switch the 50 Hz signal to line; any lengthening of the meter pulse due to other equipment is repeated onwards which can make the collection of the cost of the call unreliable. The TXE₂ SPME is better in that it will not respond to short transient pulses, however it also does not send a standard length meter pulse to line.

Stronger Crossbar
/ /

Electronic Analogue

NEW SYSTEM

The advent of the payphones increased demand for extended metering. Advantage was taken of newer technology to make the equipment more sophisticated and reliable since real money would now be collected by BT. The metering signal will be registered on any detection equipment working to the BT standard, eg Subscribers Private Meters, Private Call Logging, equipment at PABX's etc.

The new MCE is designed to work in any analogue exchange; it is normally dedicated to one subscriber and is fitted between the subscribers line and the line circuit, the connection being made by jumpering on the IDF/MDF.

It will respond to normal exchange +ve, -ve or ETH meter pulses and sends to line a 43V 50 Hz pulse of 250± 50 mS duration. A check is also made on the duration of the

exchange meter pulse to ensure that the unit does not respond to stray transient voltages. Two MCE circuits occupy a single Slide-in-Unit (SIU) and sixteen SIU's can fit into a single General Purpose Electronic Shelf.

The power supply unit, source of the 50 Hz line signals, is fitted as one complete shelf unit and can feed up to seven fully equipped MCE shelves. Existing 60V 50 Hz supplies may be used if spare capacity is available. The equipment shelves and power supplies can be fitted to either the dedicated MCE rack or a 2' 9" MAR type C rack. However if really necessary, due to space limitations, they can be fitted in spaces on existing standard racks eg 2' 9" subs meter racks, above and below the meter portion.

Since CMOS integrated circuits are used great care must be taken when handling the SIU's since they can be damaged by static electricity. For this reason when the SIU's are sent for repair they should be despatched in the original packings, a number of which will be left in the exchange after installation.

TESTER TRT317

This tester will only check MCE equipment. It is very light and is fitted with a shoulder strap. Operation is by push buttons and once connected the sequence is as follows:-

Select metering (rarely changed) - select one of the two circuits on the SIU - if the 'circuit free' lamp glows then by pushing 'reset' then 'test' the test sequence starts. This results, after about a seconds delay in one of three lamps glowing - 'pass', 'cont fail' indicating a failure in the external circuits or the MCE, or 'fail' showing a faulty MCE circuit on the SIU.

If the test was commenced with the circuit busy lamp glowing it would wait until free and then automatically proceed.

Since the tester is almost totally non-diagnostic when an MCE unit fails the test it is replaced and sent for repair.