

OPERATION OF INSTRUMENT

If necessary the pointer should be set to zero by means of the screw head on the face of the panel.

The leads fitted with Long Reach Safety Clips or clips as required should now be connected to the meter terminals.

When measuring d.c. voltage, d.c. current, or resistance, the "A.C." switch should be set to the position marked "D.C." Conversely for a.c. voltage, or current, the "D.C." switch should be set to its "A.C." position. The operative range switch should then be set to a suitable value before connecting the meter to the circuit under test. When in reasonable doubt, always switch to the highest range and work downwards, there being no necessity to disconnect the leads as the switch position is changed. *Do not, however, switch off by rotating either of the knobs to a blank position.*

The knob marked "Q" gives variable sensitivity to the meter on any range in use and serves for special applications, details of which are given later. When not in use, this knob must be seated in its normal position in the panel, otherwise false readings may be shown.

Although the instrument is flash tested to 3,400 V. a.c., it should be kept at the low potential end of the circuit (relative to earth) if it is used with accessories on a voltage system over 1,200 V. If this procedure cannot be adopted, other suitable safeguards must be applied.

CURRENT MEASUREMENT

To measure current, the instrument should be set to a suitable "a.c." or "d.c." range and then connected in series with the apparatus to be tested. Generally speaking, the power absorbed in the instrument is negligible, but in the case of low voltage heavy current circuits the inclusion of a meter may reduce the current appreciably below the value which would otherwise prevail. For example, if the meter set to its 12 A. d.c. range were connected in a heavy current circuit fed from a 4 V. source of negligible resistance, and the current measured were 8 A., this would produce a voltage drop of $8 \times 0.05 = 0.4$ V. across the meter leads. The effective voltage driving current through the load would have been reduced from 4 V. to 3.6 V. and the current indicated upon the meter would therefore be 10% less than would have flowed without the instrument in the circuit. Since the magnitude of this correction is negligible in high voltage or low current circuits, it can be ignored.