POWER SWITCH PANEL PA18/8

General Description

The PA18/8 comprises a 415-volt triple-pole air circuit-breaker, plus earth-leakage alarm and metering equipment; see parent equipment EP13/2.

The neutral busbar is connected to earth in this section of the switchboard. Two current-transformers are fitted to the earth connection, one being used to supply an earth-fault relay and the other to supply an ammeter indicating earth-leakage current.

If an earth-fault occurs, the relay is energised and switches on a lamp. Terminals are provided to which a remote lamp and a bell alarm can be connected. The alarm can be cancelled by a switch on the panel.

A second ammeter and associated meter-switch on the panel are used to measure the current through the bus-section circuit-breaker. Current-transformers of 1,500/5-ampere rating are fitted to the three live busbars.

415-Volt Air Circuit-Breaker

The breaker is an independent-manual spring-closing type designed for horizontal isolation. It has a breaking capacity of 31 MVA and a normal current rating of either 800 or 1,600 amperes depending upon the installation. Three direct-acting overcurrent trip coils are fitted.

Closing or isolation of the breaker is effected by means of a removable handle. The end of the handle can be put into the appropriate one of two sockets in the edge of a thick plate which is connected to the operating mechanism. The sockets are reached by opening a small hinged flap on the breaker front panel.

The breaker is closed by inserting the operating handle in the upper of the two sockets and pressing the handle down to the limit of its travel. An *On* indication appears behind a window to the right of the handle.

The breaker is tripped by pushing a *Press to Trip* button which is to the left of the hinged flap. The *On* indication changes to *Off*.

To isolate the breaker:

1. Push the *Press to Trip* button.
2. Put the operating handle into the lower of the two sockets.
3. Hold down the *Press to Trip* button and lift the handle to the limit of its travel. The indication *Isolated* appears in place of *Off*.

To gain access to the breaker operating mechanism, carry out the above isolating procedure and then remove a Castell key from its lock on the breaker front panel. The panel is hinged at one side and is secured by means of three thumbscrews. It is also mechanically interlocked so that it cannot be opened until the breaker is isolated.

The breaker rests on two slides and is prevented from being withdrawn by two spring-loaded plungers, one at the front of each slide, which locate with holes in a fixed framework. The plungers must be pulled out against their springs and each turned through 90 degrees to hold them out. The breaker can then be pulled clear of its cubicle, its forward motion being limited by levers fitted one at the rear of each slide. To return the breaker to the service position the reverse of the above procedure must be carried out.

Complete details of this type of breaker are given in a booklet entitled *Class 'M' Switchgear: Operating and Maintenance Instructions*, published by the English Electric Company Limited under the reference number S/G 1003A.

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