

WATER SUPPLIES DEPARTMENT

STANDARD SPECIFICATION E-90-11

DRAWING FOR SWITCHBOARD AND CONTROL BOARD

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1. **GENERAL**

This Specification is supplementary to WSD Standard Specification E-90-01 (Drawing for Electrical and Instrumentation Equipment). Drawings shall be provided to show:

- (a) Circuit / schematic diagram;
- (b) Exterior layout;
- (c) Interior layout; and
- (d) Busbar layout (*for switchboard only*).

2. **CIRCUIT / SCHEMATIC DIAGRAM**

Circuits sharing the same functionality shall be grouped into a single line on the drawing for clarity. Circuits shall be grouped by function as follows:

- (a) Current and voltage transformer leads;
- (b) D.C. power supplies;
- (c) A.C. power supplies;
- (d) Tripping control;
- (e) Closing interlocks and control;
- (f) Indication and alarm;
- (g) Instrument lead; and
- (h) Spares

3. **EXTERIOR LAYOUT**

Drawing of exterior layout shall show the following details:

- (a) Front and side elevation of panel or console fabrication details (e.g. dimensions, panel material, paint finish, door hinge, structural support, mounting details and lifting provision etc.);
- (b) Installation arrangement (e.g. components mounting arrangement and schedule of component labels etc.); and
- (C) Mounting and fixing arrangement of cable boxes and openings for cable entry and their gland plates.

4. INTERIOR LAYOUT

Drawing of interior layout shall show the following details:

- (a) Installation arrangement (e.g. wiring routes, wiring channels and components mounting arrangement and schedule of component labels etc.);
- (b) Ventilation path and cubicles / compartment segregation.

5. BUSBAR LAYOUT (*for switchboard only*)

Drawing of busbar layout shall show the following details:

- (a) Metallic material of conductors and their jointing section, insulation material of busbars and their supports;
- (b) Arrangements and dimensions of main busbars and down-droppers;
- (c) Details of busbar joints, busbar supports, busbar mounted fuses and busbar connections to switchgears; and
- (d) Ventilation spacing (e.g. location, size and protective screen etc.)