

MIL-S-17000/6A(SH)  
2 May 1983  
SUPERSEDING  
MIL-s-17000/6(SH)  
30 April 1980

## MILITARY SPECIFICATION SHEET

A

SWITCHING EQUIPMENT, COMBAT SYSTEM, COMMAND AND CONTROL,  
FIRE CONTROL AND INTERIOR COMMUNICATION SWITCHBOARD,  
SURFACE SHIP, DECK-MOUNTED, POWER DISTRIBUTION (TERMINAL BOARD CONNECTED),  
TYPE VII

This specification sheet is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the switchboard described herein shall consist of this document and the latest issue of MIL-S-17000.

## REQUIREMENTS:

Switchboard arrangement: Switchboard arrangement shall be as shown on figure 1. The front section shall provide space to mount switches, circuit breakers, and other electrical components on a door hinged on one side and latched on the other together with the necessary mounting hardware. The back section shall contain eight modules.

Size: Size of the switchboard section shall be as shown on figure 1.

Mounting: Switchboard enclosure shall be provided with mounting bolt clearance holes as shown on figure 1.

Arrangement: Where practicable, circuit breakers carrying the same voltage and frequency shall be grouped together. Meters shall be located at the top of the switchboard unit. Meter switches shall be adjacent to the associated meters. Where power conversion equipments are controlled by the switchboard, the switches for the power conversion equipments shall be grouped together.

Modules: Each back section module shall contain type 7TB12 terminal boards conforming to MIL-T-55164/13 or relays, or a combination of both as specified in the acquisition technical data package. Modules shall be located as shown on figure 1. Minimum spacing between terminal boards or

A denotes changes.

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relays shall be 3/8 inch. Only wiring for active circuits from the back of the terminal boards or relays to the electrical components shall be installed. The front of the terminal boards or relays shall be reserved for ship wiring. Jumper straps shall be provided to either connect one large ship conductor to two or more terminals or relays or connect two or more terminals together for Internal switchboard branching in accordance with requirement 1 of MIL-STD-1657. Special care shall be taken to maintain specified clearances for these straps between adjacent terminal boards or relays. Horizontal edges of these modules shall be covered with insulating material as required to prevent chafing of ship wiring.

Module and terminal board designation: Modules shall be marked A through H, top to bottom. The individual type 7TB12 terminal boards on each module shall be marked A through U where applicable, omitting I, O, and Q.

Harness wiring: Wiring between the circuit breakers and bus bars on the rear of the door shall connect via flexible wiring to the module terminal boards or relays. Terminal shall be marked. Wiring shall be marked.

Wire size and jumper strap connections: Large conductor ship cables shall be terminated on jumper straps in accordance with requirement 1 of MIL-STD-1657. Input wire sizes from the rear terminal board or relay to the bus bars shall be as shown by the schedule in requirement 1 of MIL-STD-1657. Output wires from the circuit breakers to other components or rear terminal boards or relays shall be in accordance with MIL-S-17000 where applicable or the schedule in requirements 1 of MIL-STD-1657.

Bus bar marking: Bus bars mounted on circuit breaker mounting blocks shall be identified as AB, and shall be uniquely numbered for each separate supply. Got example "AB1" for the first supply, "AB2" for the second supply and so on. Each individual bus bar shall be given a terminal designation of A, B, and C for 3-phase buses, and A and B for d.c. buses or 1-phase a.c. buses. For 3-phase buses, the phase sequence shall be A, B, and C, respectively from right to left, or top to bottom when viewed from the front of the switchboard. For direct current buses, the polarity shall be positive (+), negative (-) respectively from right to left, or top to bottom when viewed from the front of the switchboard.

Circuit breaker: Circuit breakers shall be type ALB or AQB in accordance with MTL-C-17588 or MIL-C-17361, respectively. Circuit breakers provided and installed shall be of the type and rating as specified in the acquisition technical data package.

Mounting of circuit breakers: Mounting for circuit breakers shall be of the appropriate design as specified in MIL-C-17588 or MIL-C-17361. Bases shall be of the type for mounting up to six single-phase or 3-phase circuit breakers.

Circuit breaker handle yokes: Circuit breaker handle yokes shall be provided for interlocking two single pole (type ALB or AQB) circuit breakers for simultaneous operation (breakers made up this way will not operate on a common trip principle). If one breaker trips, the other will not be mechanically opened

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Load circuits: A separate circuit breaker or set of circuit breakers shall be provided for each branch or load circuit emanating from the switchboard. Single phase circuits shall be so connected among the three phases so that the load on the three phases is balanced insofar as practicable considering that certain related circuits must be connected to the same phase. Phase connections and circuit breaker ratings for each circuit shall be as specified in the acquisition technical data package.

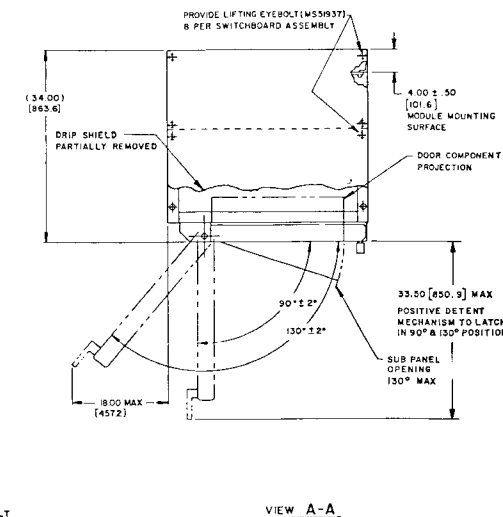
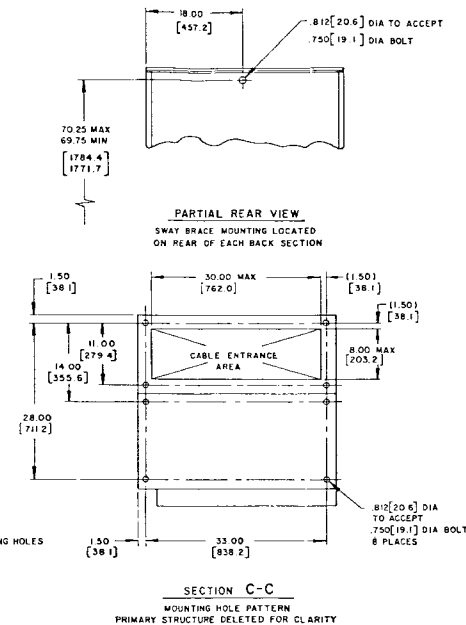
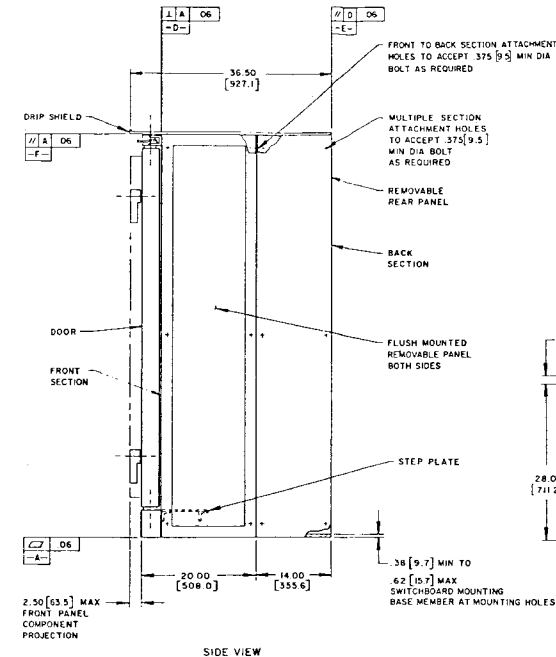
Bus bars: Bus bars shall be copper in accordance with QQ-C-591. Bus bars shall be 1 inch by 1/4 inch and shall be compatible with the circuit breaker mounting blocks. Sufficient spare holes shall be provided in bus bars for changing the phase connections of circuit breakers connected to the buses.

Preparing activity:  
Navy - SH  
(Project 1290-N382)

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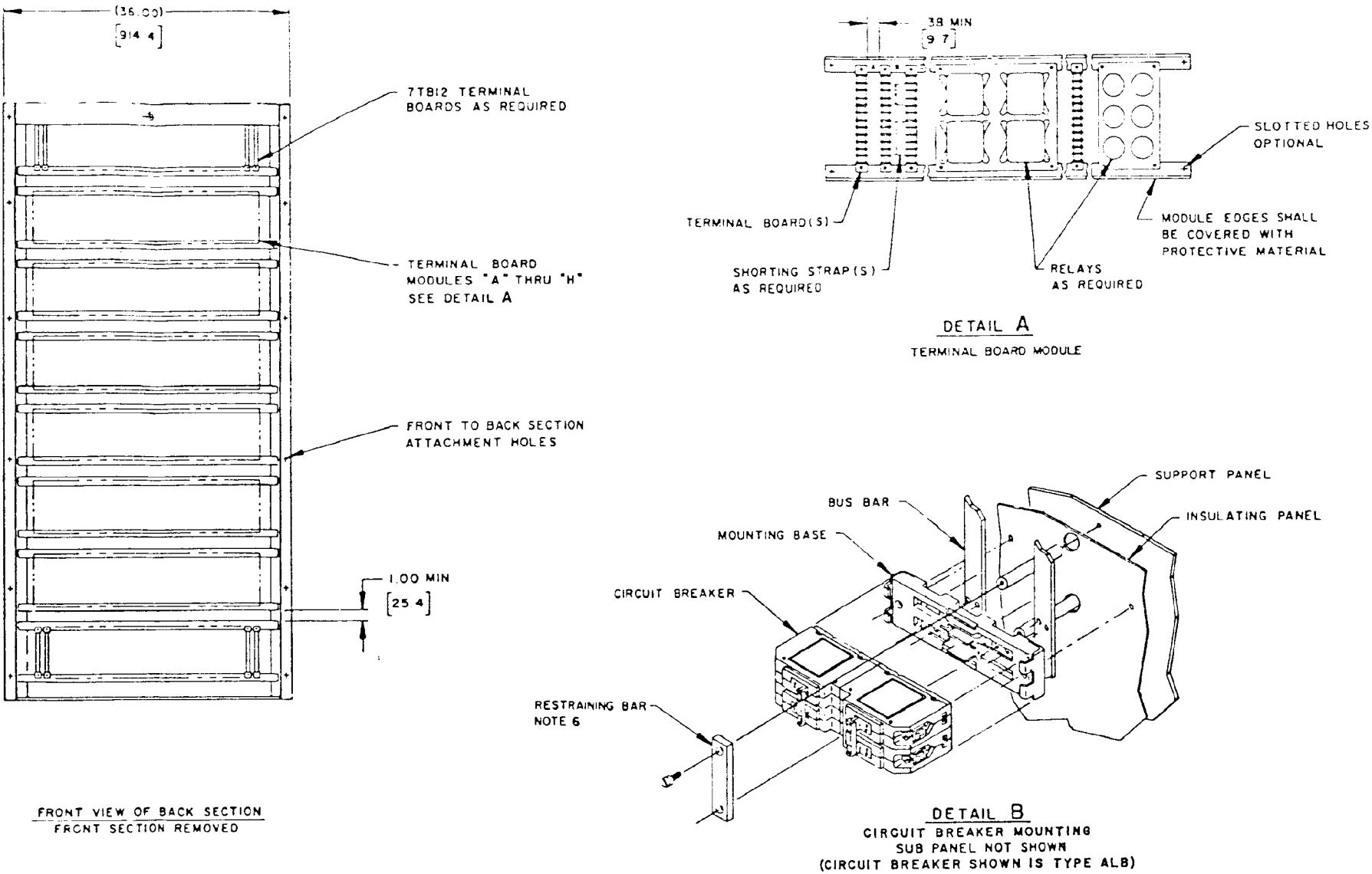


1. ALL DIMENSIONS ARE IN INCHES.
2. METRIC EQUIVALENTS ARE GIVEN FOR GENERAL INFORMATION
3. ONLY AND BASED UPON 1 INCH = 25.4 MM. DIMENSIONS IN
4. INCHES ARE MILLIMETERS.
5. UNLESS OTHERWISE SPECIFIED, TOLERANCES SHALL BE XX+.03
6. XXX-.00 AND ANGLES  $\pm 30'$
7. INTERIOR AND EXTERIOR SURFACES OF ENCLOSURE SHALL BE PAINTED
8. IN ACCORDANCE WITH REQUIREMENTS OF MIL-S-17000.
9. STRUCTURE SHALL BE IN ACCORDANCE WITH MIL-S-17000.
10. PROVIDE RESTRAINING BAR TO RETAIN CIRCUIT BREAKER WHEN SUB PANEL
11. DOOR IS IN OPEN POSITION.
12. THE METRIC CHARACTERISTIC SYMBOLS, USED ON THIS
13. FIGURE ARE DEFINED IN ANSI Y14.6.



VIEW A-A

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FIGURE 1. Switchboard type VII (sheet 2 of 2).