RELAY RACK
UNIT FRAMEWORK AND WIRING
EQUIPMENT DESIGN REQUIREMENTS
COMMON SYSTEMS

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the unit framework and wiring for relay rack units designed to mount on standard relay rack framework.

1.02 This specification is reissued to cover surface wiring, D-type terminal strips, and wide usage of 2-inch mounting plates. Fig. 1 through Fig. 8, and references to vertical local cabled units were removed.

Description

1.03 ***A relay rack unit*** consists of one or more mounting plates or panels, normally having terminal strips, for mounting and wiring the equipment generally of one circuit. Where considerable space saving can be realized, a multicircuit unit may be designed. However, when designing a multicircuit unit, customer requirements should be taken into account. The terminal strips are mounted on the unit for connecting outside wiring to the unit wiring. Unit arrangements are used to permit the equipment to be wired, assembled, and tested in the shop. These units may be shipped individually to be mounted by the installer, or they may be mounted on relay rack framework in the shop and shipped as fully equipped bays.

1.04 ***Relay Rack Mounted Unit Design:*** The arrangements of relay rack units covered herein provide a design which lends itself to application on any standard type of relay rack. The designs permit use of a minimum guard rail width of 10 inches as well as use of the 1-foot 0-inch width of guard rail.

1.05 ***The unit framework*** consists essentially of two 3/4-inch wide steel unit mounting bars drilled and tapped to accommodate mounting plates. The bars arranged to mount up to eleven 2-inch plates are 3/16 inch thick, while those for from twelve to thirty 2-inch plates maximum are 1/4 inch thick. Tapped holes in the bars mount the unit mounting plates, and clear holes at predetermined intervals mount the assembled unit to the relay rack uprights. When mounting panels or single mounting plates on relay racks, no unit mounting bars are required.

1.06 ***Units Having 206-Type Selectors:*** The selectors are mounted on the units by means of a pair of horizontal bars extending the full width of the bay and fastened to the unit mounting uprights. The horizontal bars are drilled on 2-1/8 inch horizontal centers and spaced vertically so as to permit mounting the selectors across them. A pair of these horizontal bars may be used for mounting only selectors across the full width of a unit, or short mounting plates in line with the selectors may be used when the number of selectors does not occupy the full width of the unit. In the latter case, a short vertical bar is mounted between the horizontal bars at a point to accommodate three short mounting plates of various lengths. The selectors are mounted at the left, facing the front or apparatus side.

1.07 ***Mounting plates*** 23 inches long and 2 inches wide are generally employed for mounting the equipment. In certain transmission systems applications, 1-3/4 inch wide by 19 inch and 23 inch long mounting plates are also used. In some cases, short mounting plates in line with 206-type selectors will be used. Coded channel-type plates are specified wherever possible. These plates are usually furnished blank and are punched in accordance with mounting arrangements specified on the unit drawing. Coded plates, which are prepunched for specific apparatus arrangements, are also available.

1.08 ***D-type terminal strips*** are preferred for these units. These strips are arranged for solderless wrapped connections and are furnished in sizes of 8, 16, 24, 32, or 40 terminals. The strips with 32 or 40 terminals (D4 or D5) are preferable. The D-type terminal strips mount on the front of the mounting plate. Unit wiring is terminated on the rear and the switchboard cable is fanned through a throat in the strip and terminated on the front. In certain systems, 224-type terminal strips are still used on relay rack units. Also 203-type terminal strips are used in certain transmission systems applications primarily for equipment which is panel mounted. Where flexibility such as a connection field is required, 234-type or 251-type terminal strips may be used.

1.09 ***Wiring*** for these units is generally surface wiring. Surface wiring shall be provided for units of five 2-inch mounting plates or less and shall be in accordance with Section 800-612-153. However due to wiring congestion, or the need for optional apparatus or wiring, unit local cabling wiring may be used for units of less than five 2-inch mounting plates and shall be in accordance with Section 800-612-151. For units greater than five 2-inch mounting plates, local cable wiring shall be used.

2. SUPPLEMENTARY INFORMATION

800-600-000—List of General Equipment Requirement Sections

Bell Telephone Laboratories, Incorporated

Dept 2361

801-000-000—Equipment Design and General Equipment Requirements and Engineering Information—Common Systems
800-610-152—Gauge and Insulation of Wire
005-150-101—Wiring and Cabling—Wiring Symbols, Abbreviations, and Definitions
800-612-151—Wiring and Cabling—Design of Cable Forms
800-612-153—Forming, Fanning, Sewing, and Skinning—Wiring and Cabling
J97025—Relay Rack—Angle Type—Framework and Cabling
J23064—Relay Rack Frames—No. 5 Crossbar System

3. DRAWINGS

Framework

ED-92243-70—Relay Rack Unit Framework 2-Inch by 23-Inch Mounting Plates or Short Mounting Plates in Line with 206 Selectors

Unit Local Cabling

ED-91601-01—Relay Rack Unit—Horizontal Local Cable Wiring D-Type or 224-Type Terminal Strips
ED-99301-01—Relay Rack Unit Local Cable Wiring for Units Having 206-Type Selectors