



ATT-TP-76413

Connecting Block Standards For Conventional Frames For AT&T Local Exchange Companies

Presented in this document are the standards and requirements for Central Office Connecting blocks.

To:	The primary audience for this document are AT&T LOCAL EXCHANGE companies in the following disciplines: Switch Capacity Planner/Engineer, Frame Planner, Manager Equipment Implementation (MEI), Maintenance Engineer, and Network Operations (LFO-In). This document is to be used internally and externally within SBC LOCAL EXCHANGE companies and their Authorized Vendors and has a limited distribution subject to the header/footer information.
Effective Date:	03/30/2006
Issue Date:	Issue 5, 10/11/06
Expires On:	N/A
Related Documents:	
Canceled Documents:	Replaces SBC-002-316-016, Connector, Terminal Block Product Specifications, Issue 1, Jan, 1, 2002.
Issuing Department:	AT&T Services, NP&E, Common Systems and Transport
Business Unit:	Network
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INTRODUCTION

This document describes the general characteristics and features expected and required for connector blocks used within the Wire Centers of the AT&T LOCAL EXCHANGE companies.

The requirements described in this document detail specific product expectations for blocks utilized on conventional distributing frames.

The specifications identified in this document reflect standards for blocks approved on a going forward basis. Current approved blocks may not meet all standards listed in this document.

1. REASON FOR REISSUE

Issue Number	Date Modified	Brief Description of Changes	Author
5	10/11/2006	Change references from SBC to AT&T throughout entire document.	Dave Smith
4	8/28/2006	Update sections 3.1.1, 3.1.2, 3.1.3, and 3.1.4.	Dave Smith
3	3/30/2006	Update author name and contact lists	Dave Smith
2	9/10/03	Replaces SBC-002-316-016, Terminal and Connector Block Standards, Issue 1, January 2, 2002. To define the standards as a Technical Publication for internal and external use. Considered as Issue 2 of SBC-TP76413.	Mark E. Powers
2	9/10/03	Section 2, Modified block definitions.	Mark E. Powers
2	9/10/03	Section 5.2 added chart to reflect block sizes applicable for use.	Mark E. Powers
2	9/10/03	Section 7 updated references in their entirety.	Mark E. Powers

2. Product Definitions

Connector Block - Provides a method of interconnecting various network equipment elements. The connector block consists of an equipment connection field on the rear of the block and a cross-connect field on the face of the block. The method of termination on the front of the connector block will consist of either a wire wrap or quick clip connection. The method of termination on the equipment field may be wire wrap, quick clip or connectorized. Connector blocks may be located on either the vertical or horizontal sides of a conventional distributing frame.

Protector Block - Provides a method of interconnection from the outside plant, or entrance cable, to the facilities within the Central Office. The function of the protector block is to provide primary electrical protection, a test field, and a cross-connect field, as well as a point of control where pairs may be opened, grounded, crossed or bridged. The primary components of a protector block consists of a cross connect field, test access field, protection field, cable

termination point (stubbed and stubless), and the jumper wire fanning strip. Generally, these blocks will be found on the vertical side of a conventional main distributing frame.

NOTE:

The Protector block requirements are covered in AT&T-TP76415, *Common Systems Standards for AT&T LOCAL EXCHANGE Carriers*.

3. Specifications

3.1. Connector Block Requirements

3.1.1. General Specifications

- Materials will not sustain combustion when an open flame source is removed. They will have a rating of 94V-0 when tested according to the "Vertical Burning Test for Classifying Material", Underwriters Laboratories publication UL 94, "Test for Flammability of Plastic Materials".
- All polymeric materials used in the manufacture of the blocks must have an oxygen index of at least 28%, in accordance with ASTM D-2863, "Flammability of Plastics Using the Oxygen Index Method".
- All mounting components shall be included with each block for frame types used within the United States. Blocks shall be mounted directly on the frame without the use of intermediate mounting devices.
- Termination types will include Single Wire Wrap (SWW), Bifurcated Wire Wrap (BWW), and Bifurcated Quick Clip (BQC).
- Shall meet AT&T LOCAL EXCHANGE Carriers NEBS Requirements as defined in AT&T-TP-76200.
- Labels will be of a non-removable variety, and will be made of a material that allows for the easy use of pen, pencil or computer printer. They must be erasable for pencil entries.

NOTE:

Western Electric style Quick Clip terminations shall only be used on those frames in which the predominant method of termination has been quick clip. On a going forward basis, on all new frames, wire wrap terminations are the required method of connection. Other Insulation Displacement Connectors, (IDC), technologies shall not be used.

3.1.2. Block Body Specifications

- The connector block shall be 7.94 inches wide, 4 inches high and 4.25 inches deep. The blocks will be sized to allow for mounting end to end on 8-inch centers.
- Mounting hole patterns measuring 3.75" x 1.18" (9.53 cm x 3.03 cm) for standard frames and 7.5" x 1.37" (19.05 cm x 3.48 cm) for older frames. Blocks shall be mounted directly on the frame without the use of intermediate mounting devices.
- The color of the block shall be white, gray, or putty.
- The color of the pin bed shall be white or off-white.
- The color of the block cover will be white, gray, or putty.
- The front facing cross-connect field will contain a checkerboard grid pattern to reduce wiring errors when terminating jumpers. The back of the cross-connect field will also contain the checkerboard grid pattern to facilitate equipment cable terminations. The checkerboard color should distinctly contrast with the block body – dark blue or black would be appropriate. Pattern will be either decimal or octal depending on the specific application.
- Electrical Characteristics:
 - **Dielectric Strength** - Minimum dielectric strength between any two conductors shall be 1000V RMS.
 - **Leakage Resistance** - Leakage resistance between any two conductors shall exceed 1000 megohms at 100 VDC.
- The connector block assembly can be rotated and locked in place, within the housing, to allow easy and secure access to the rear of the connection field for equipment cable terminations.
- Must have a snap-on, protective cover, capable of accepting appropriate stick-on labels to provide accurate circuit identification. Labels will be provided with the blocks.
- Snap-through fanning strips, front and rear, and sized to be capable of displaying two **BOLD**, hot stamped, alpha-numeric characters that can be read by a person of normal eyesight from a minimum distance of 5 feet, for easy pin identification.
- Block bodies, housings, and covers are made of plastic, rather than metal, to minimize the chance of electric shock or personal injury.
- Block housings must have sufficient points, at the rear of the block, to support switchboard/gray cable strain relief, as described in AT&T-TP76300.

- Replaceable fanning strips are desirable, but not required.
- Fanning strips shall be available in several colors to facilitate the application the block is being used for:
 - Yellow – Switch Terminations
 - White – Tie Cables
 - Blue – Outside Plant
 - Beige - Miscellaneous
- All terminals are recessed behind the plane of the fanning strips by at least 1/16 of an inch.
- The pin placement shall be equally spread across the face of the block, regardless of the pin count.

3.1.3. Pin/Clip Specifications

- Pins/clips must be replaceable, without the need for special tools.
- Pins/clips shall be silver in color.
- The working length of the wire wrap pin shall be no less than 16/32 of an inch for both the front and back pins.
- The edges of the working length shall be parallel within 0.0045 inches per inch and be square, not rectangular.
- At least one shoulder shall be provided to act as a stop for the wrapping tool wherever possible
- The working length shall be free of unusual nicks, burrs and other imperfections in the edges not common to the best workmanship in punched parts. Burrs shall not be more than 0.006 inch high.
- The diagonal of the cross section of the flat punched terminals must be greater than 0.061 inch. The maximum diagonal shall not exceed 0.073 inch.
- The working length shall be essentially straight and free of angular bends or crimps. A small amount of bowing is permissible provided the working length will slide freely without binding into a tubular gauge with a maximum inside diameter of 0.074 inch and a length equal to the working length.

3.1.4. Connector Block Densities

- The cross-connect field will be made up of several termination densities, up to 150 pairs.
- The termination pins on the cross-connect field will be arranged across the entire field regardless of pair count.
- Common generic pair counts and uses:

Pair Counts	Applications
50	Not commonly available in 89 type blocks. Found on 112 and 78 type COSMIC blocks, for shelves 1 and 11.
64	Commonly used for various switch terminations. Used for miscellaneous line equipment.
96	Not used in AT&T LOCAL EXCHANGE carriers.
100	Tie cable terminations, all CLEC collocation terminations, miscellaneous equipment terminations.
128	Prime standard block. Line equipment, shielded tie cables.
150	Not approved for use in AT&T LOCAL EXCHANGE companies.
200	Not approved for use in AT&T LOCAL EXCHANGE companies.
256	Not approved for use in AT&T LOCAL EXCHANGE companies.

4. RELATED DOCUMENTS

Document	Description	Issue & Date
AT&T-TP-76200	Network Equipment – Building Systems (NEBS)	Current
AT&T-TP-76300	Installation Guide within the Central Office	Current
AT&T-TP-76400	Detail Engineer Requirements for the C.O.	Current
AT&T-TP-76412	Ethernet Standards for the Telecommunications Industry	Current
AT&T-TP-76450	Common Systems Standards for the SBC Communications Network	Current
TR-PUB-48010	Requirements For Solderless Wrapped Connections	March 1981
ASTM D-2863	Flammability of Plastics Using the Oxygen Index Method	Current
UL 94	Test for Flammability of Plastic Materials	Current

5. CONTACT LIST

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Acronyms

A.1. NETWORK ACRONYMS DICTIONARY

[Refer to AT&T-000-000-020, Network Acronyms Dictionary.](#)