

Figure 1

1. INTRODUCTION

This instruction sheet describes the use and installation of the AMP* LAN-LINE* Self-Terminating Thinnet Drop Cable. See Figure 1.

Cable specifications and part numbers of LAN-LINE Self-Terminating Thinnet Drop Cables are listed in Figure 2.

CABLE SPECIFICATIONS

Cable Type:	RG-58
Nominal Impedance:	50Ω ± 2Ω
Insertion Loss:	.22db at 10MHz
Terminator:	50Ω ± 1Ω

AMP PART NO.	CABLE DESCRIPTION
414137-1	2.50 meters [8.2 ft.] cable
414137-2	1.83 meters [6 ft.] cable
414137-3	3.66 meters [12 ft.] cable
414137-4	7.62 meters [25 ft.] cable
414465-1	0.64 meters [25 in.] cable
414465-2	0.89 meters [35.0 in.] cable
414465-3	1.37 meter [54.0 in.] cable

Figure 2

NOTE

All dimensions on this document are in metric units [with U.S. customary units in brackets].

Reasons for reissue are in Section 5, REVISION SUMMARY.

Read this information thoroughly before installing the Self-Terminating Thinnet Drop Cable.

2. DESCRIPTION

The Self-Terminating Thinnet Drop Cable is to be used in thin wire Ethernet and IEEE 802.3, 10Base2 type local area networks for connecting workstations in the network cable bus. This one-piece cable assembly consists of a dual coaxial cable in a single jacket. At one end of the assembly the two coaxial cables are common at a single BNC-style plug connector. At the other end of the assembly access to each cable is by way of a BNC-style jack connector.

The Self-Terminating Thinnet Drop Cable has a special built-in terminating feature that automatically terminates the BNC jack connectors to the system characteristic impedance when left open. This allows a network to be installed without the need for external terminators and is also a fail-safe feature for the network. By automatically terminating when left open, the Self-Terminating Thinnet Drop Cable protects the network from inadvertent open circuits which can cause a network failure.

The BNC plug on this cable assembly functions as the "tee" connector that is used for connecting workstations to the network. When the BNC plug is not connected to a network device, the cable system remains functional and is not affected by the BNC connector being left open.

3. NETWORK DESIGN REQUIREMENTS

The design rules for using the Self-Terminating Thinnet Drop Cable in an 802.3, 10Base2 network are the same as those using discrete BNC-style tee and plug connectors. The design rules are as follows:

- Backbone cable must conform to Thin Ethernet and 10Base2 cable requirements: RG-58 coaxial cable with a nominal characteristic impedance of 50 ohms (Ω).
- Maximum segment length of 185 meters [607 ft.]
- Maximum of 20 network connections per segment.
- The segment length is increased by twice the length of each drop cable used in the segment.

When using the Self-Terminating Drop Cable, it is important to remember the dual cable nature of the cable assembly. Since there are two sections of cable per assembly, the length of the network segment is increased by two times the length of the drop cable. For instance, a 1.83 meter [6 ft.] cable assembly increases the segment length by 3.66 meters [12 ft.].

CAUTION

FOR NETWORKS THAT UTILIZE A FILE SERVER OR COMMUNICATIONS SERVER FOR ALL DATA TRANSFERS:

If it is necessary to disconnect the RG-58 backbone from the Self-Terminating Drop Cable, be sure to remove the segment portion that is "away" from the file server in the network. This will ensure that the segment portion closest to the file server is functional and maintains a properly terminated coaxial line.

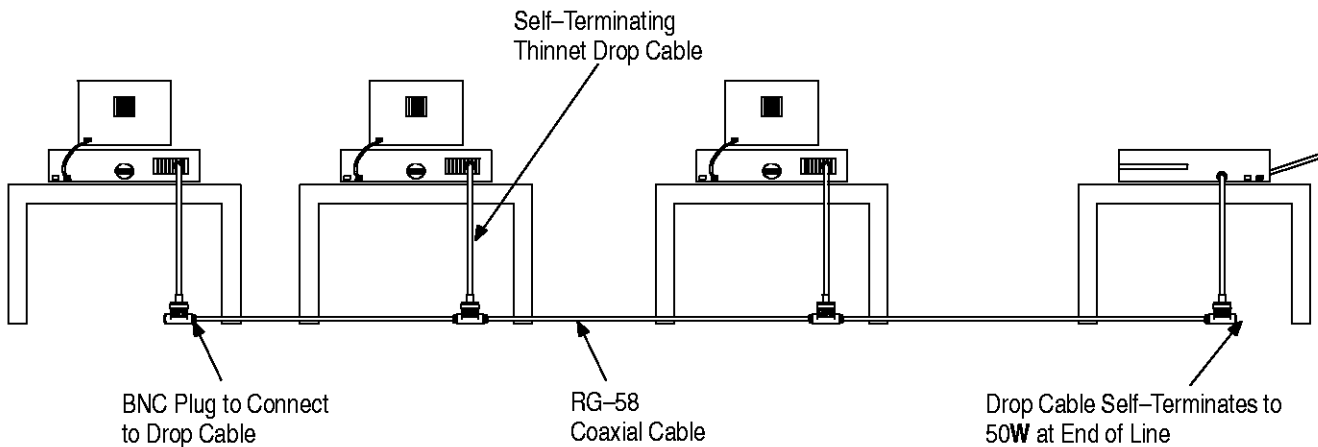
4. INSTALLATION

The Self-Terminating Thinnet Drop Cable can be used with RG-58 cable systems in above floor, below floor, or in ceiling applications. Figure 3 illustrates a typical installation using the Self-Terminating Thinnet Drop Cable. The following procedure is recommended for the network installation.

1. Locate all network connection locations and those that may be used in the future.
2. Install the backbone RG-58 coaxial cable so that the cable bus is within 2.44 meters [8 ft.] of all

network node connections. The backbone cable may be placed below the floor, in the ceiling, or simply on the floor depending upon the building architecture and the method desired.

3. Once the backbone cable is installed, locate suitable locations for connecting the Self-Terminating Thinnet Drop Cable. Cut the cable at these locations and install 50 Ω BNC plug connectors to each end of the RG-58 cable.
4. Connect the BNC plugs on the RG-58 cable backbone to the BNC jack connectors on the Self-Terminating Thinnet Drop Cable.
5. Connect the BNC plug on the Self-Terminating Thinnet Drop Cable to the BNC jack on the workstation Ethernet adapter card.
6. If no workstation is to be connected at the present time, simply leave the BNC plug on the drop cable open, and protect the plug from dirt or moisture until the drop will be used.
7. If the Self-Terminating Thinnet Drop Cable is to be used at the end of the network segment, connect the RG-58 cable backbone to one of the BNC jack connectors on the drop cable, and leave the other end open.
8. If the ends of the segment do not connect to a Self-Terminating Thinnet Drop Cable or a repeater device, a 50 Ω terminator must be installed for proper network operation. Use either a BNC jack terminator connected to the BNC plug on the cable, or use a BNC plug terminator with an in-line splice adapter.



Typical Installation Using the Self-Terminating Thinnet Drop Cable in a 10Base2 Network

Figure 3

9. Grounding: Each network segment must be grounded per IEEE 802.3, 10Base2 specifications. If a multiport repeater is used at one end of the segment, check the manufacturer's specifications to see if the repeater internally grounds the segment, or if no repeater is used, the segment must be grounded at a single point. This can be accomplished by inserting a suitable BNC plug or in-line splice adapter in the segment (preferable near one end) to which a suitable ground wire can be connected. Alternatively, a 50Ω BNC-style terminator with a ground strap may be connected to the open jack connector of the Self-Terminating

Thinnet Drop Cable. (Refer to the Ethernet or IEEE 802.3 specifications for more information on grounding a network segment.)

5. REVISION SUMMARY

Since the previous release of this sheet, changes were made per EC 0990-0429-99.

- Added LAN-LINE Self-Terminating Thinnet Drop Cable 414465-1, -2, and -3
- Added Section 5, REVISION SUMMARY