STATION PROTECTION
STATIONS SERVED BY OPEN WIRE

1.00 INTRODUCTION

This section covers the identification, use, location, fasteners, installation, and maintenance of the 98A, 106A, 106C, and 109A fused protectors and associated mountings and brackets.

2.00 GENERAL

2.01 *Service orders or other local instructions will specify when station protection is required.*

2.02 The fused protectors described in this section must be used for all stations served by open wire. (B rural distribution wire and isolated sections of cable are considered as open wire for purposes of station protection.)

2.03 Where fused protectors are installed in confined spaces such as protector cabinets provided by the customer, it is necessary to install a 46A shield on the line side of the protector. The metal detail furnished with the shield is placed between the protector and the cabinet and held in position by the screw used to fasten the protector on the line end. The shield fastens to the metal detail with screws furnished.

2.04 Insulated building attachments and tubes are required when drop or block wires to fused protectors are attached to or pass through a flammable surface.

2.05 Fused protectors must be used when required to run more than one drop or block wire to furnish battery for a telephone system. A maximum of three drop or block wires furnishing battery for a system may be terminated on one fused protector and should be bridged on the line side of the protector.

2.06 Sneak current fuses (60 type) are not required in connection with protectors associated with residence systems, wiring plans, or key equipment. They shall, however, be provided on special service and leased lines when specified on the service order or by other local instruction.

2.07 PBX protection is covered in the B series of Bell System Practices governing such protection.

2.08 Special protection arrangements for station sets located in explosive atmospheres and autotrailers are specified in the C sections governing such installation.

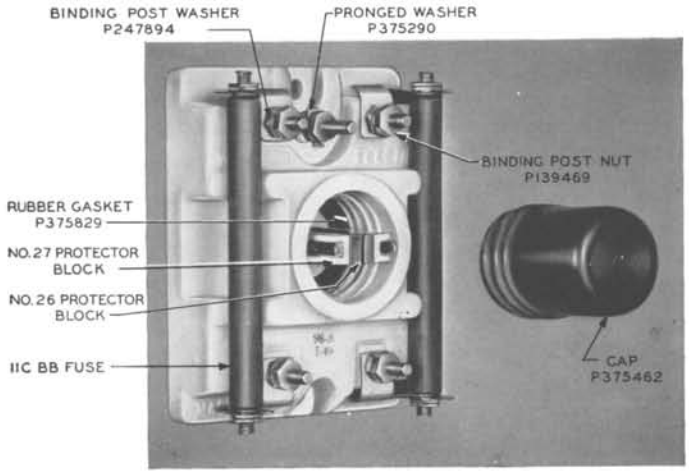


FIG. 1—98A PROTECTOR

3.00 IDENTIFICATION OF PROTECTORS AND MOUNTINGS

3.01 The 98A fused protector should be used with a 93C or 93A protector mounting when installed outdoors. The protector complete with 93C mounting is coded 1093C.

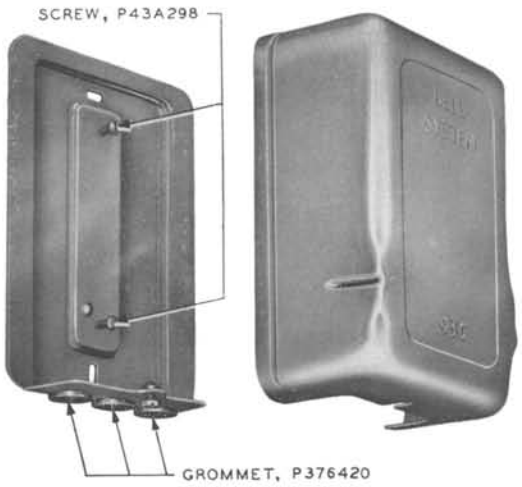


FIG. 2—93C PROTECTOR MOUNTING

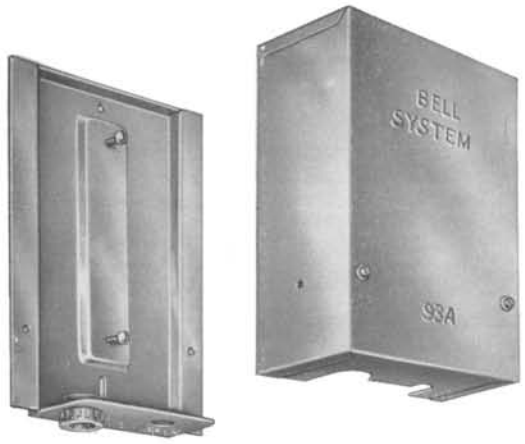
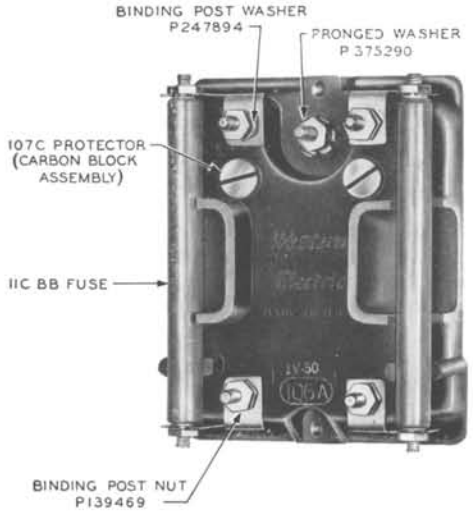


FIG. 3—93A PROTECTOR MOUNTING

3.02 The 106A fused protector should be used with the 93C or 93A protector mounting when installed outdoors. The protector complete with 93C mounting is coded 1193C.



Note: The 106A protector cannot be converted to fuseless operation.

FIG. 4—106A PROTECTOR

3.03 The 106C fused protector differs only slightly in external appearance from the 106A protector. However, due to its construction and improved current-carrying capacity, it can be converted to fuseless operation in metal sheath cable areas. It should be used with the 93C or 93A protector mounting when installed outdoors. The protector complete with 93C mounting is coded 1293C.

3.04 The 109A fused protector has a capacity of four lines and is designed for use at multiple dwellings or at other locations where multiple fused protection is required.

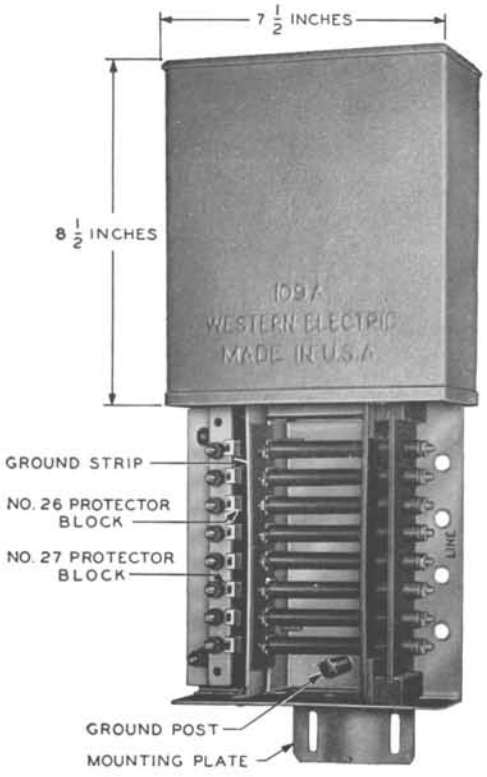


FIG. 5—109A PROTECTOR

4.00 LOCATING PROTECTORS

Consider the following when locating protector:

- Accessibility (avoid placing where a ladder is necessary for installation or maintenance).
- Location of telephone, protector ground, and entrance for drop or block wire.
- Freedom from likelihood of mechanical damage.
- Appearance standpoint (avoid locations on front of buildings or in living quarters).
- Dry and well ventilated locations when mounted inside or underneath buildings.

5.00 FASTENING PROTECTORS AND MOUNTINGS

5.01 Protectors may be mounted in any position.

5.02 Fasteners are indicated in Table A. All screws and fasteners shall be of sufficient length to mount securely.

TABLE A

Apparatus	Fasteners
Protectors (Except 109A)	No. 8 RH Blued Wood Screws or equivalent.
109A Protector	No. 14 RH Galvanized Wood Screws or equivalent.
Protector Mountings	No. 8 RH Galvanized Wood Screws or equivalent.

5.03 Backboards should be used only when required because of uneven or insecure mounting surfaces. Choose backboard as indicated in Table B or a suitable alternate type.

TABLE B

Type of Protector Installation	Backboard Type
98A or 106 (Three or Less)	79
98A or 106 (Four or More)	81

6.00 INSTALLING PROTECTORS

6.01 The number of fused protectors which may be connected to various sizes of ground wire is covered in the C section of Bell System Practices governing the selection of wire and cable.

6.02 Terminate line and inside wires on protectors so that the ring conductors (red or single-tracer wires) shall be connected to the right-hand side of the protector (on ceilings the right-hand side as viewed from the inside wiring end of the protector).

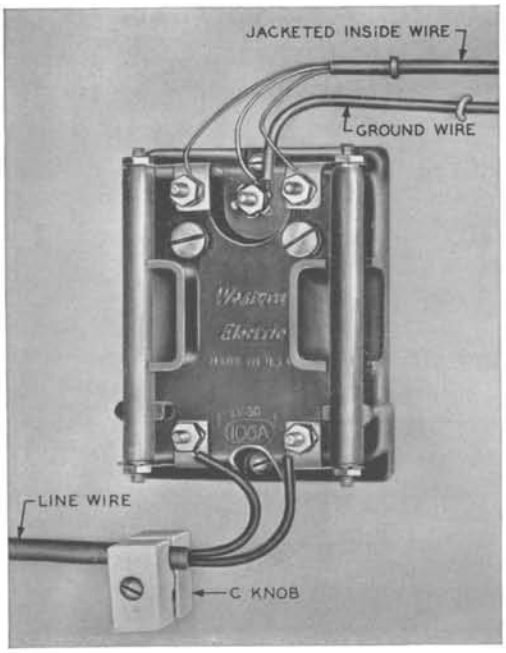


FIG. 6—INSTALLATION OF 106A PROTECTOR

6.03 The 98A protector installation is identical to 106A protector installation.

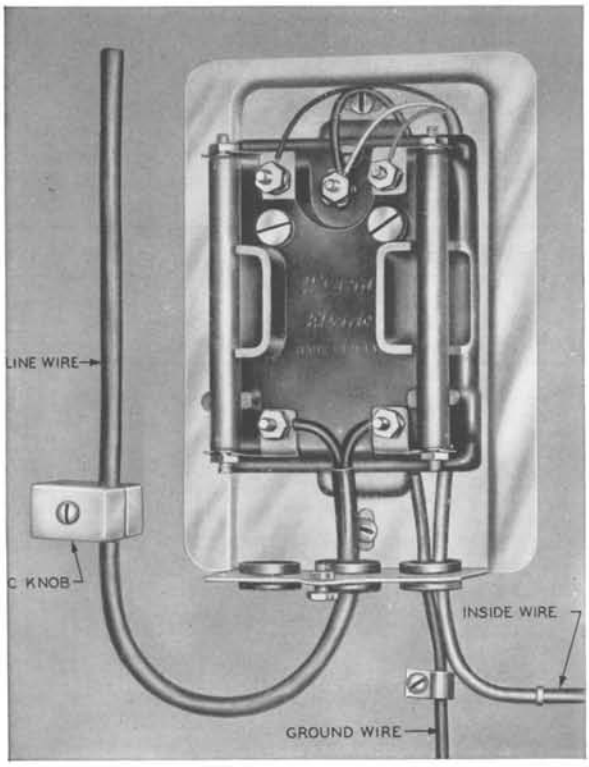


FIG. 7—INSTALLATION OF 1193C PROTECTOR

6.04 The 1093C and 1293C protector installations are identical to 1193C protector installation.

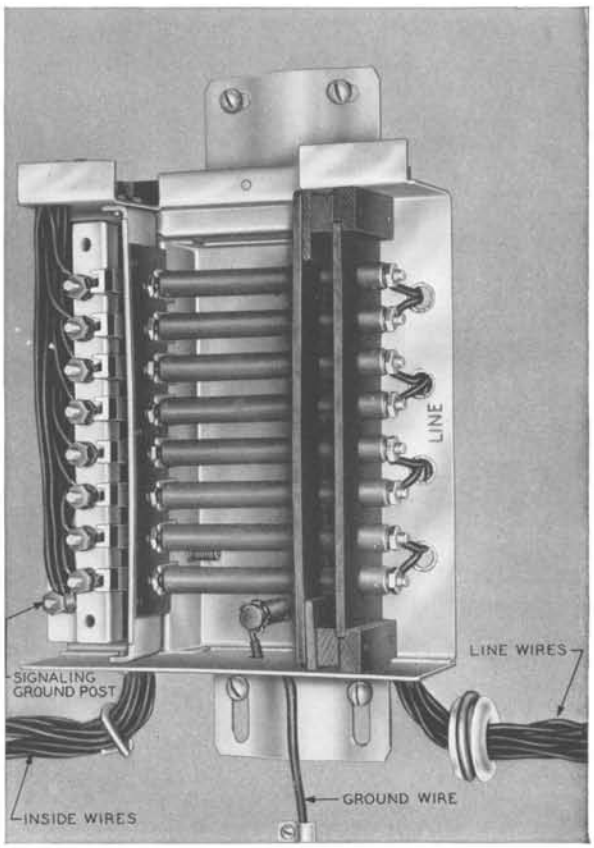


FIG. 8—INSTALLATION OF 109A PROTECTOR

6.05 Sneak current fuses, when specified, may be arranged with the 98A, 106A, and 106C fused protectors. Two 60-type fuses are mounted between the protector and a 94A protector mounting.

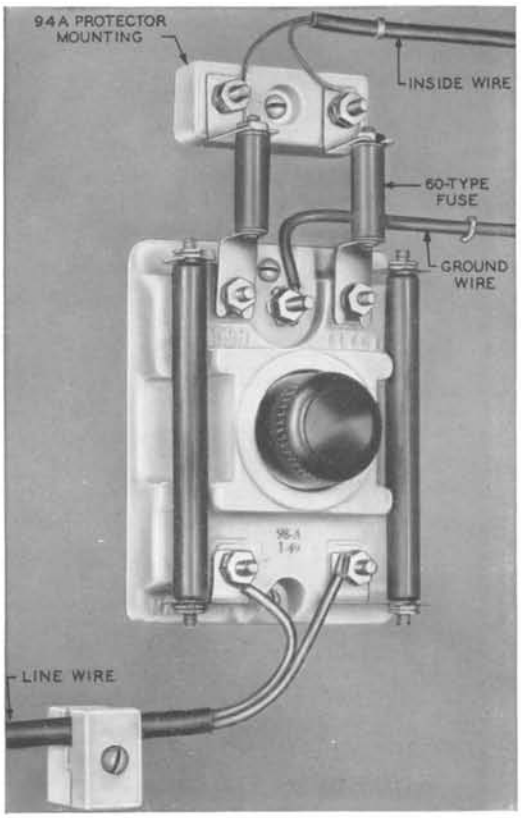


FIG. 9—TYPICAL INSTALLATION OF 98A PROTECTOR WITH 60-TYPE FUSES

7.00 MAINTENANCE

7.01 Station protectors need not be inspected on subsequent installation and maintenance visits unless a trouble condition is suspected within the protector, or local instructions specify otherwise.

7.02 When a protector is visited, the following work operations shall be performed:

- Replace protectors, mountings, or associated parts which are defective or in poor condition.
- Replace broken or cracked carbon blocks on the 98-type protector. If No. 26 protector block is excessively pitted, turn over and re-use opposite side if it is in good condition. If neither side is satisfactory, replace block.
- Replace a 107-type protector (carbon block assembly used in 106A and 106C protectors) in which the blocks have operated or are otherwise defective with a 107C protector.
- Inspect wire terminations at protector.
- Inspect ground wire and ground clamp.