

METALLIC FACILITY TERMINAL
2-WIRE TRANSMISSION UNITS (J99343BA, BB, BC)
SD-1C359-01

INSTALLATION AND TESTING

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1. GENERAL

1.01 This section covers the installation and testing of the J99343BA, BB, and BC Metallic Facility Terminal (MFT) transmission units.

1.02 When this section is reissued, the reason for reissue will be given in this paragraph.

1.03 The J99343BA, BB, and BC transmission units are described in Section 332-912-101. Section 332-910-180, MFT General Applications Information, contains compatibility charts and drawings that may be of help when additional information is required.

2. INSTALLATION

2.01 The J99343BA, BB, and BC MFT units are passive; therefore, no power supplies are necessary for their operation.

2.02 These units will usually be mounted in double module MFT shelves; however, there are occasions when the units (except the J99343BB)

will be mounted in single module shelves. In either case, they are always mounted in transmission unit slots.

A. J99343BA 2-Wire Transmission Unit

2.03 The J99343BA unit was designed to permit signaling lead access for loop signaling repeaters (LSRs) and other signaling units when transmission enhancement at the MFT is not required.

2.04 The J99343BA unit contains five slide type switches that must be operated to the correct positions at the time of installation. The correct settings for the switches are given on the circuit layout record (CLR).

2.05 The switch designations and their functions are as follows:

S1 (STA Z) and S2 (SWG Z)—These switches determine the impedance (600 or 900 ohms) of the two sides of the unit. With S5 (described later) in the NOR position, the A-side impedance is controlled by the SWG Z switch and the B-side impedance is controlled by the STA Z switch. When the J99343BA unit is used at a central office to interface a 2-wire switch, or at a 900-ohm PBX, both switches should be in the 900-ohm position. When used at a 600-ohm PBX, the side toward the PBX should be in the 600-ohm position and the side toward the facility should be in the 900-ohm position.

S3 (STA BOR) and S4 (SWG BOR)—These switches control build-out resistors (BORs). These resistors are necessary to limit the loop current on short loops when the BOR

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function is not included in the LSR or other signaling unit. The correct settings for these switches depends on the type of LSR or other signaling unit, loop resistance, and talk battery voltage.

S5 (NOR-REV)—This switch is used to properly orient the signaling unit with respect to the transmission unit. When the switch is in the NOR position, the A side of the transmission unit is connected to the switch side of the signaling unit; the B side of the transmission unit is connected to the station side of the signaling unit. With the switch in the REV position, the A side of the transmission unit is connected to the station side of the signaling unit; the B side of the transmission unit is connected to the switching side of the signaling unit.

2.06 In those cases where the switch settings are not specified by the CLR, the information necessary to determine the settings is available in Sections 332-912-101 and 332-911-201.

B. J99343BB Bypass Transmission Unit

2.07 The J99343BB unit was designed to permit the use of MFT signaling equipment with 44V4 or 24V4 transmission equipment.

2.08 The J99343BB unit is installed in the transmission unit slot of double module MFT mounting arrangements. This unit, although mounted in the transmission unit slot, has no effect on the transmission characteristics of the circuit as only the SX or A and B leads from the V4 equipment are connected to it.

2.09 Three switches on the J99343BB unit should be operated to the positions specified by the CLR card.

2.10 The three switches on the J99343BB unit are as follows:

S3 (STA BOR) and S4 (SWG BOR)—These switches control BORs on the station and switching sides to limit current in the signal path when short loops are encountered.

S5 (NOR/REV)—This switch function is the same as the S5 (NOR/REV) switch of the J99380BA unit.

C. J99343BC 2-Wire Transmission Unit

2.11 The J99343BC unit is an improved version of the J99343BA unit, however it supplies the same functions.

2.12 The J99343BC unit should not be used with J99343AA and J99343AB LSRs unless they have been modified to include a 21A resistance lamp in the station side and a BOR with shunting switch on the switch side. The modified LSRs may be identified by the markings L1, A, B or L1, A, MOD B on the units.

2.13 Five slide switches and one screw type switch are used to configure the unit as required. The settings for the switches are specified by the CLR for each application.

2.14 The switches on the J99343BC unit are as follows:

A-SIDE Z and B-SIDE Z—These switches select the impedance (600 or 900 ohms) of the A and B sides of the unit respectively.

REV—This switch is used to properly orient the signaling unit with respect to the transmission unit. In the NOR position, the A side of the transmission unit is connected to the switching side of the signaling unit and the B side of the transmission unit is connected to the station side of the signaling unit. In the REV position, the connections between the transmission unit and the signaling unit are reversed.

L1 SH and L2 SH—These switches insert or remove (short out) SX inductors in the signaling path.

IN:NOR/OUT:MIN LOSS—This screw type switch inserts (screw down) or removes (screw up) resistor R1. R1, when in, improves the echo return loss on the A side by approximately 5 dB, however, it also increases the loss through the unit 0.4 dB at 1 kHz. In those applications that do not have a return loss requirement, the switch may be opened (screw up) to reduce the loss through the unit.

3. TESTING AND MAINTENANCE

3.01 The 2-wire transmission units, J99343BA, BB, and BC, are quite stable and should cause very few problems.

3.02 Should trouble be suspected in one of these units, particularly during circuit order testing, the switch positions and cross connections should be verified first. If the trouble persists, the suspected unit should be replaced with a unit of the same type known to be in serviceable condition and with the switches properly positioned.

3.03 When the replacement of a unit fails to clear a trouble suspected in the MFT, tests using the MFT test extender should be conducted to isolate the trouble. The MFT test extender (J99343TB) description and operation are covered in Section 332-910-102.

3.04 MFT plug-in units found to be defective are to be returned to Western Electric Company for repairs as repairs should not be attempted in the field.