

WLR-2 WIDEBAND LOOP REPEATER INSTALLATION

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1. GENERAL

1.01 The WLR-2 wideband loop repeater is intended as a 2-way repeater on 4-wire local loop facilities for data transmission in the 10.2- to 51-kc band. The repeater can be obtained in a moistureproof No. 470A apparatus case for pole or manhole mounting. When conditions require that more than one WLR-2 repeater be mounted at an above ground location, an enclosure (J70159E) is provided in the form of a KS-14296 pole-mounted cabinet equipped with a terminal block, stub cable, and mounting rack facility for up to six bay-mounted WLR-2 repeaters per J70159D. Instructions, found in Section 640-300-200, covering the installation of outdoor cabinets for N1 carrier telephone systems, can be applied to the J70159E.

1.02 This section is reissued to describe the 470A apparatus case, to revise the installation procedures, and to correct option connections. Since this reissue covers a general revision, marginal arrows ordinarily used to indicate changes have been omitted.

1.03 The work authorization will indicate the location of the apparatus case and the splicing arrangement. There should be no deviation from the specified mounting arrangement, especially in a manhole. If there is, it may adversely affect future plans.

1.04 Each enclosure containing one WLR-2 basic framework accommodates two plug-in J70159C amplifiers, two plug-in 382A equalizers, and one plug-in power select adjustor. It is hermetically sealed when properly closed and maintained under air pressure.

1.05 Detailed instructions for mounting the apparatus case are given in Section 632-515-206. Instructions covering the removal and reinstallation of the container of the apparatus case are given in Section 632-525-210.

2. DESCRIPTION

2.01 Each WLR-2 wideband loop repeater (J70159B, List 2) will be supplied with hardware for installing the apparatus case in a manhole or on a pole.

2.02 Furnished as part of the apparatus case is a 15-foot length of CA1984 stub cable consisting of 16 pairs of 24-gauge polyvinyl-chloride (PVC) insulated wires in a PVC jacket covered with a lead shield. The apparatus case can also be furnished with a 10-foot or a 20-foot stub cable.

2.03 The WLR-2 repeater, illustrated in Fig. 1, consists of a 470A apparatus case, a basic repeater framework, a 572A-6 connecting block (lightning protector) factory-wired inside the case, and a plug-in ED-73186 power select adjustor. It can be equipped with two plug-in J70159C amplifiers, two plug-in 382A equalizers, or shorting plugs as required.

3. PRECAUTIONS

3.01 Always relieve the pressure on the apparatus case before loosening the V-band clamp preparatory to removing the container.

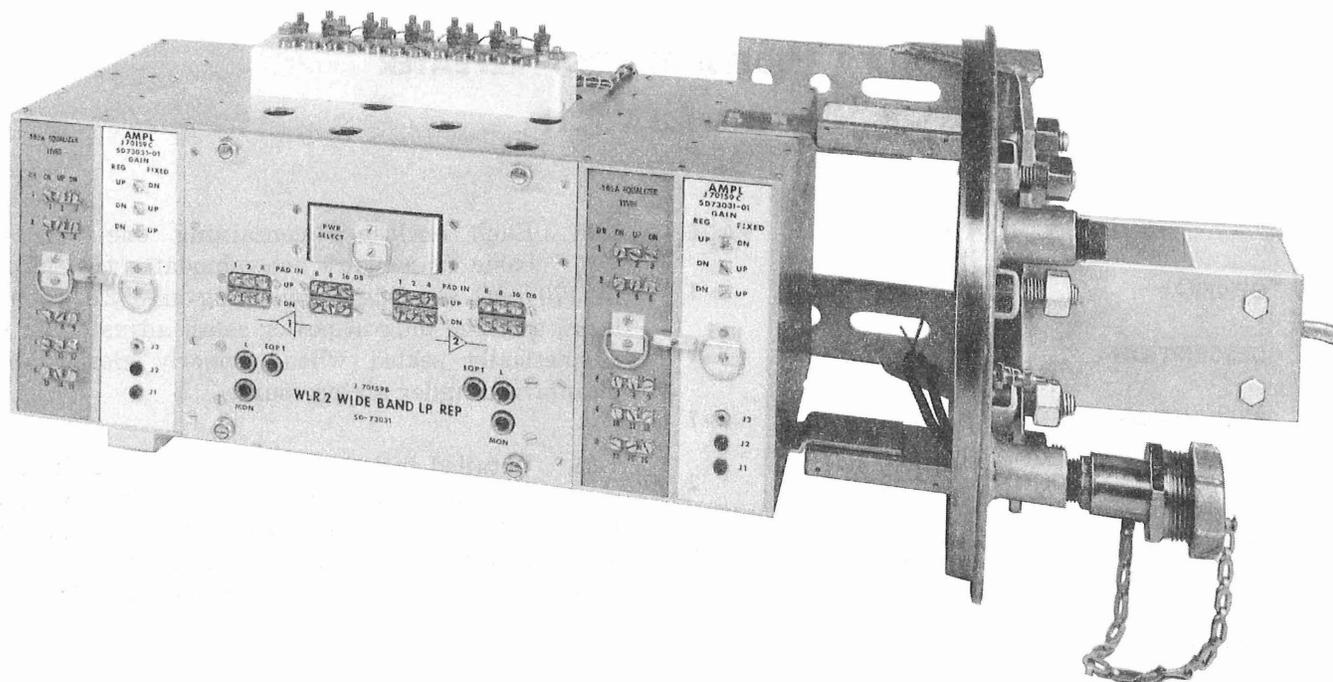


Fig. 1 — WLR-2 Repeater with Container Removed

Note: The clamp and chain assembly is a restraining device to prevent the container from being blown off if the V-band clamp should be accidentally loosened before the pressure of the apparatus case has been properly reduced. It should always be in place when the apparatus case is pressurized.

3.02 Never use an apparatus case as a step.

3.03 After removing the container of an apparatus case, install a new O-ring (Part No. P48D378) if required, before replacing the container. The gasketed surface must be free of dirt before reassembly of the apparatus case.

3.04 After replacing the container, apply air pressure to the apparatus case and test the seal for leaks with pressure testing or another suitable solution.

3.05 At an aerial installation where the craftsman is considerably above ground level on a supporting structure, parts must be raised and lowered between the ground and the work location by the use of a handline.

4. POWERING CONDITIONS

4.01 Connections of the stub cable for 2-way transmission are shown in Fig. 2.

4.02 The repeater normally receives its power from simplex current sent over the lines. The plug-in power selector is used to arrange the current path for various powering conditions.

4.03 The power selector incorporates adjusting screws for setting up the current paths. These are accessible only when the plug-in unit is removed. Fig. 3 illustrates adjustment of screws on the power selector for powering from either direction.

4.04 The option exists to use a 22-volt regulated power supply to power the repeater and supply sealing current in either direction. A J86463A regulated power plant may be used for this purpose; it is a pole-mounted unit. Procedures for installing and maintaining the power supply are covered in Section 167-275-301. To power the repeater from the 22-volt supply and arrange the current path for various powering and sealing conditions, see Fig. 4.

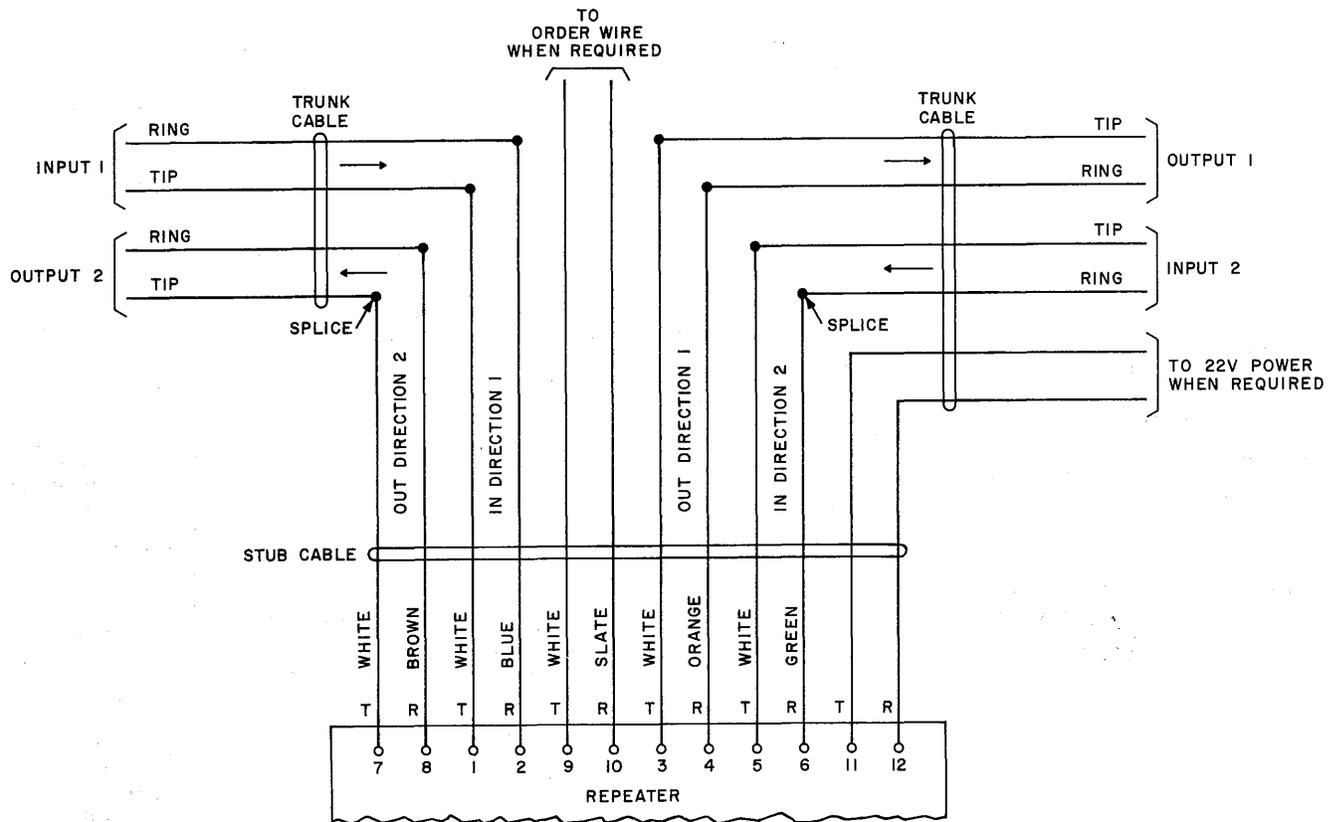


Fig. 2 — Stub Cable Terminal Connections

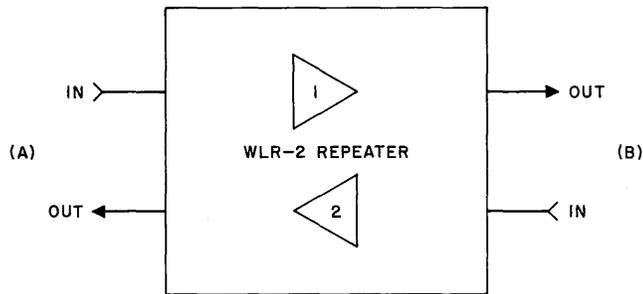
5. ORDER WIRE

5.01 Access to the order wire, when provided, is available at the order-wire terminal on the base plate without removing the cover. To use

the order wire, connect a 1011B handset to the standoff terminals in the order-wire terminal.

Caution: Tape one of the test clips to avoid shorting the order-wire leads in case the test clips accidentally touch.

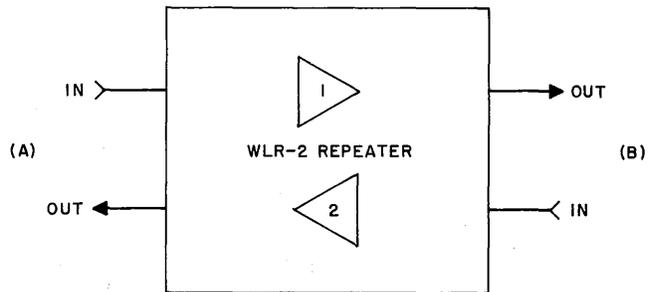
NOTE:
THE DIRECTION OF CURRENT FLOW IS ALWAYS IN THE DIRECTION OF TRANSMISSION.



POWERING OPTIONS	POWER SELECTOR SCREWS
POWER THROUGH REPEATER IN BOTH DIRECTIONS (A TO B) AND (B TO A)	CLOSE - S1, S3, S5, S7 OPEN - S2, S4, S6, S8
RECEIVE POWER FROM (A) SEAL TOWARD (B)	CLOSE - S1, S3, S6, S8 OPEN - S2, S4, S5, S7
RECEIVE POWER FROM (B) SEAL TOWARD (A)	CLOSE - S2, S4, S5, S7 OPEN - S1, S3, S6, S8

Fig. 3 — Powering Arrangement When Repeater is Remotely Powered

NOTE:
THE DIRECTION OF CURRENT FLOW IS ALWAYS IN THE DIRECTION OF TRANSMISSION.



WIRE -22 VOLTS (CONNECTOR BLOCK E1) TO (TSI TERMINAL 49)
WIRE +22 VOLTS (CONNECTOR BLOCK E2) TO (TSI TERMINAL 29)
ON TSI- CUT STRAPS BETWEEN 40 TO 44 AND 37 TO 41.
ON TSI- STRAP TERMINALS 44 TO 52, 41 TO 49, 32 TO 36, AND 29 TO 33.

POWERING OPTIONS	TERMINAL STRIP (TSI)	POWER SELECTOR SCREWS
SEND SEALING CURRENT TOWARD (A)	STRAP 30 TO 34 AND 50 TO 54	ALL OPEN
SEND SEALING CURRENT TOWARD (B)	STRAP 31 TO 35 AND 51 TO 55	ALL OPEN
RECEIVE SEALING CURRENT FROM (A)		CLOSE-S2 ALL OTHERS OPEN
RECEIVE SEALING CURRENT FROM (B)		CLOSE-S6 ALL OTHERS OPEN

Fig. 4 — Powering Arrangement When Repeater is Locally Powered