

WESCOM 7375
DIAL LONG LINE REPEATER MODULE
IDENTIFICATION, INSTALLATION, AND TESTING

1. GENERAL

1.01 This section covers identification, installation, and testing of WESCOMs 7375 Dial Long Line (DLL) Repeater Module.

1.02 Information presented in this section is based on the manufacturers' manual provided by WESCOM, Inc.

1.03 This module (7375) is a 2-wire ringing and signaling repeater for loop-start circuits. (For ground start circuits, a WESCOM 7371 DLLE must also be used.)

1.04 The module plugs into a WESCOM 400-type mounting assembly.

2. DESCRIPTION

2.01 WESCOMs 7375 PBX Trunk DLL Module, a plug-in printed-circuit module, is used to increase the effective signaling, supervisory, and dial pulsing range on PBX trunks. (For 2-wire individual line applications, the WESCOM 7370 unit should be installed.)

Features

2.02 Main features provided are:

- (a) Ring detection and ring-trip.
- (b) Low pulse distortion.
- (c) Low current drain.
- (d) Current limitation and idle line termination.
- (e) Relay contacts that may be used to disable a negative impedance repeater during idle circuit conditions.

Specifications

2.03 Electrical and physical characteristics are:

- **MAXIMUM LOOP LIMITS:** 2000 ohms.
- **MAXIMUM LOOP CURRENT:** 120 mA.
- **DIALING DISTORTION:** Less than 4%.
- **DIALING SPEED:** 8 to 14 pps.
- **RINGING VOLTAGE:** 90 to 130 Vac at 16 to 66 Hz.
- **MAXIMUM INPUT LEVEL:** +20 dBm.
- **FREQUENCY RESPONSE:** 200 to 10,000 Hz, ± 1 dB.
- **INSERTION LOSS:** 0.4 dB.
- **POWER REQUIREMENTS:** 10 mA (idle), 70 mA (busy) at -48 Vdc.
- **RING-TRIP SENSITIVITY SWITCH:**
 1. High Position: Loop resistance of more than 1500 ohms.
 2. Low Position: Loop resistance of less than 1500 ohms or several ringers.

3. INSTALLATION

Mounting

3.01 The module will mount in various size capacities of WESCOM 400-type mounting assemblies.

3.02 WESCOM 400-type Mounting assemblies are available in capacities of one to 13 modules.

(a) Type 400-1 (one-module) through 400-9 (nine-module) mounting assemblies can be mounted on 19- or 23-inch relay racks or in key telephone unit (KTU) apparatus cabinets. These types of mounting assemblies must be installed with mounting bars and require 7-inches of vertical space.

(b) Type 400-10 (ten-module and 400-11 (eleven-module) mountings are provided with mounting brackets. These types of mounting assemblies can be mounted on 19-inch relay racks and require 6-inches of vertical space.

(c) Type 400-12 (twelve-module) and 400-13 (thirteen-module) mountings are provided with mounting brackets. These types of mounting assemblies can be mounted on 23-inch relay racks and require 6-inches of vertical space.

Connections

3.03 Wire connections are made to a 56-pin wire-wrap card connector provided as part of the mounting assembly. (See Table A for connection information.)

Note: Do NOT make any wire connections with power applied to the equipment or modules installed in the mounting assembly.

**TABLE A
WIRE CONNECTIONS**

WIRE OR LEAD	TERMINAL
TIP-C O SIDE	51
RING-C O SIDE	33
TIP-STATION SIDE	41
RING-STATION SIDE	49
-48V DC BATTERY	35
DC GROUND	17
RING GENERATOR	45
GENERATOR GROUND	11
RING GENERATOR START	37
E6 RPTR DISABLER	29

Note: Connect on 56-pin connector mounting assembly.

Options

3.04 WESCOMs 7375 DLL Repeater Module provides options for 600 or 900 ohm im-

pedance matching, bypass ringing, and pulse contact protection.

3.05 Option features are added or removed from the circuit by strapping or unstrapping appropriate terminals of the module or mounting assembly. (See Fig. 1 and Table B.)

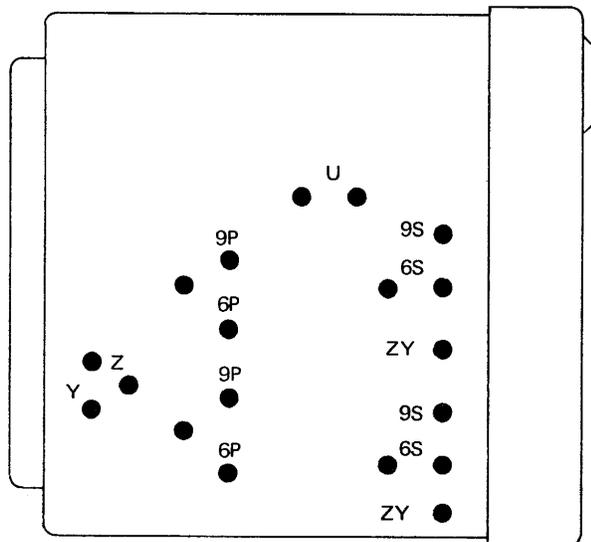
Note: When soldering wire straps to module terminals, use insulated wire and a soldering iron of 30 watts or less.

**TABLE B
OPTION CONNECTIONS**

OPTION	CONNECTION STRAPS
600 OHM IMPEDANCE PRIMARY WINDING SECONDARY WINDING	• BETWEEN POSTS 6P • BETWEEN POSTS 6S
900 OHM IMPEDANCE PRIMARY WINDING SECONDARY WINDING	• BETWEEN POSTS 9P • BETWEEN POSTS 9S
BY-PASS RINGING	† 51 to 11 † 33 to 45
PULSE CONTACT PROTECTION	* BETWEEN POSTS "U"

*STRAP ON SOLDER SIDE OF MODULE
†STRAP ON PIN CONNECTORS OF MOUNTING ASSEMBLY

Caution: Do NOT make any wire connections with power applied to equipment or module in mounting assembly.



**WESCOM 7375 DLL Repeater Module
Option Strapping Locations
Fig. 1**

Module

3.06 The module contains a mercury-wetted relay. Excess mercury may collect on the contacts of the relay during shipment. This may cause a “shorted” condition; therefore, before inserting, *GENTLY* tap the module on a hard surface while it is held in an upright position.

3.07 When all connections and options are made, the module may be inserted into the mounting assembly.

Note: Do NOT force any module into the mounting assembly. If the module encounters excessive resistance while being inserted, remove it and check card guides and connector for alignment and/or foreign particles.

Ring-Trip Sensitivity Switch

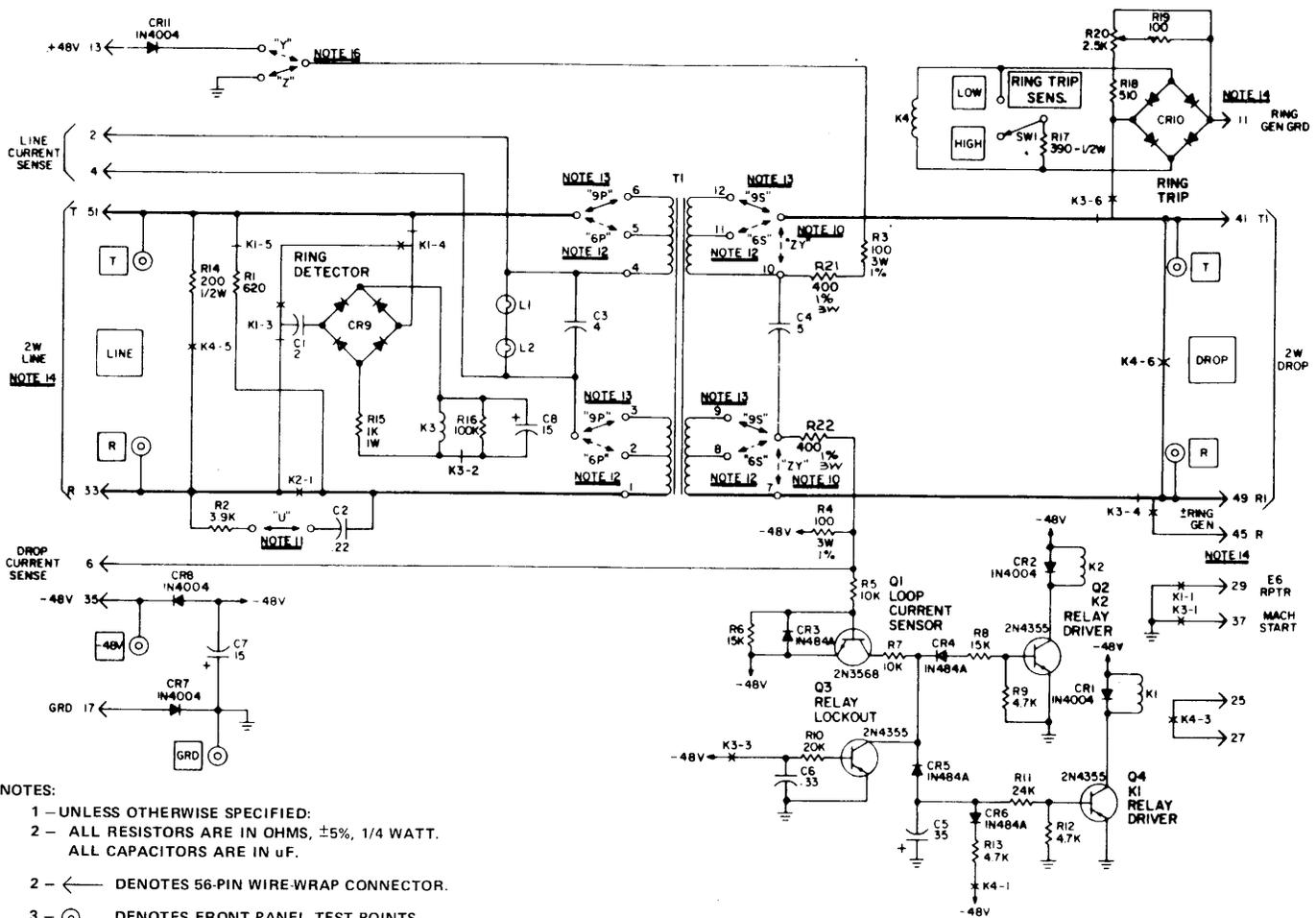
3.08 The ring-trip sensitivity switch, provided on the front panel, should be used to match the ring-trip sensing capability of the WESCOM 7375 DLL Repeater to a particular application (eg, the *LOW* sensitivity position should be used for loops having a dc resistance of less than 1500 ohms or for loops employing several ringers).

Note: It may be necessary to use a biased ringing source on loops when several ringers are involved to eliminate premature activation of the ring-trip circuit, while at the same time guaranteeing reliable ring-trip operation during the ring-cycle.

4. TESTING

4.01 If problems are encountered in operation, check the following:

1. Verify that all wire connections and option features have been properly completed. (See Tables A and B.)
2. Verify that the module is making good electrical connection with the mounting assembly card connector. Move module out and in several times from mounting assembly.
3. Verify that power is wired to the mounting assembly card connector by connecting a voltmeter across the -48Vdc and GRD test points on the front panel. The reading should be -48 ± 4 Vdc.
4. If excessive pulse distortion is experienced, remove the “U” strap from the module terminals. (See Table B.)
5. If none of the items in Steps 1 through 4 correct the problem, replace the module.



- NOTES:
- 1 - UNLESS OTHERWISE SPECIFIED:
 - 2 - ALL RESISTORS ARE IN OHMS, $\pm 5\%$, 1/4 WATT. ALL CAPACITORS ARE IN μF .
 - 2 - \leftarrow DENOTES 56-PIN WIRE-WRAP CONNECTOR.
 - 3 - \odot DENOTES FRONT PANEL TEST POINTS.
 - 4 - \square DENOTES FRONT PANEL DESIGNATIONS.
 - 5 - \longleftrightarrow DENOTES FACTORY STRAPPING OPTION.
 - 6 - \dashrightarrow DENOTES INSTALLER STRAPPING OPTION.
 - 7 - \times DENOTES NORMALLY OPEN RELAY CONTACT.
 - 8 - --- DENOTES NORMALLY CLOSED RELAY CONTACT.
 - 9 - --- DENOTES PRIMARY TRANSMISSION PATH.
 - 10 - OPTION "ZY" IS FOR USE WITH LOOP SIGNALING ON THE SIMPLEX LEGS OF A 24V4 REPEATER.
 - 11 - STRAP OPTION "U" IS USED FOR PULSING CONTACT PROTECTION.
 - 12 - FOR 600 OHM PRIMARY, STRAP "6P"; FOR 600 OHM SECONDARY, STRAP "6S".
 - 13 - FOR 900 OHM PRIMARY, STRAP "9P"; FOR 900 OHM SECONDARY, STRAP "9S".
 - 14 - FOR BY-PASS RINGING APPLICATION STRAP CONNECTOR PINS 51 AND 11 TOGETHER AND CONNECTOR PINS 33 AND 45 TOGETHER.
 - 15 - USE A BIASED RINGING SOURCE WHEN SEVERAL RINGERS ARE INVOLVED.
 - 16 - FOR 96 VOLT OPERATION, REMOVE "Z" STRAP OPTION AND INSERT "Y" STRAP OPTION.

Schematic Diagram of WESCOM 7375 DLL Repeater Module

Fig. 2