

730 Dual Repeat Coil

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1. GENERAL

1.01 This Section provides circuit description, installation, and basic testing information for the Wescom 730 Dual Repeat Coil. The reverse side of the attached schematic diagram provides a history of previous schematic revisions.

1.02 The 730 Dual Repeat Coil (Figure 1) provides two impedance matching line transformers for either two-wire or four-wire operation. Each transformer provides "A" and "B" leads on one side (with a capacitor strapping option) for signaling and talk battery application, and simplex or duplex signaling leads on the other side.

1.03 The 730 Dual Repeat Coil is constructed as a plug-in module designed to mount in the Wescom Type 400 Mounting Assembly. Type 400 Mounting Assemblies are available in capacities of from 1 to 13 modules and allow for either KTU apparatus-case or relay-rack mounting. The 730 Dual Repeat Coil makes electrical connection to the system through one of the 56-pin, wire-wrap connectors provided as part of the mounting assembly.

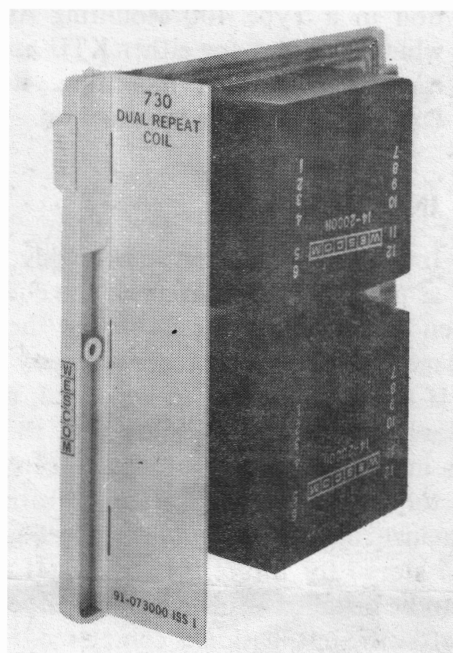


Figure 1. 730 Dual Repeat Coil

2. SPECIFICATIONS

2.01 Specifications describing the electrical and physical characteristics of the 730 are as follows:

- (a) REFLECTED IMPEDANCE: 150, 600 or 900 ohms $\pm 10\%$.
- (b) INSERTION LOSS: 0.5 dB at 1000 Hz.
- (c) BANDPASS CHARACTERISTIC:
0.5 dB, 500 Hz - 26 kHz;
1.0 dB, 300 Hz - 39 kHz;
3.0 dB, 180 Hz - 68 kHz.
- (d) UNBALANCED DC WINDING
CURRENT: 100 mA.
- (e) MAXIMUM ISOLATION: Between wind-
ings is 500 V RMS at 60 Hz.

- (f) **MAXIMUM POWER INPUT:** +20 dBm.
- (g) **WEIGHT:** 2 lbs. 4 oz.
- (h) **DIMENSIONS:** Height, 5-19/32 inches; Width, 1-1/2 inches; Depth, 6 inches.
- (i) **MOUNTING:** Module occupies one position in a Type 400 Mounting Assembly which provides for either KTU apparatus case or relay rack mounting. Refer to Part 4 for mounting information.

3. INSPECTION

3.01 Inspect the equipment thoroughly, as soon as possible after delivery. If the equipment has been damaged in transit, report the extent of damage to the transportation company immediately. If the equipment is to be stored, make an operational check to determine that the equipment is in proper working order as received from the factory. After an indication of satisfactory performance has been obtained, the equipment may be stored for future installation. If the System is to be installed at once, make an operational check after the installation is completed.

3.02 Wescom equipment is specifically identified by the model number and final-assembly number silk-screened on the front panel of the plug-in module. At the start of production, the final-assembly number is assigned an issue number of 1 which becomes an integral part of the final-assembly number. After the start of production, this issue number is advanced each time a major engineering change occurs. Therefore, be sure to use the model number and final-assembly number when making inquiries about the equipment. The issue number of the instruction manual and schematic diagram attached should be the same as the issue number assigned to the equipment. If a one-to-one correspondence does not exist between these items, request from Wescom the instruction manual required for your equipment.

4. MOUNTING

4.01 The 730 Dual Repeat Coil is designed to mount in one module position of a Type 400 Mounting Assembly. Type 400 Mounting

Assemblies are available in capacities of from 1 to 13 modules and may be equipped and prewired for any combination of modules in the Wescom product line.

KTU apparatus case mounting

4.02 Type 400-1 (one-module) through 400-5 (five-module) Mounting Assemblies may be installed in a 15A (equivalent to W.E.Co. 31B) KTU apparatus case. Type 400-1 through 400-13 Mounting Assemblies may be installed in a 16C (equivalent to W.E.Co. 16C) KTU apparatus case.

relay rack mounting

4.03 Type 400-1 through 400-9 Mounting Assemblies require the use of mounting bars when mounted on either a 19- or 23-inch relay rack. 400-10 and 400-11 Mounting Assemblies are provided with mounting brackets for mounting directly across 19-inch relay racks. Type 400-12 and 400-13 Mounting Assemblies are also provided with mounting brackets for 23-inch relay rack mounting.

4.04 Because Type 400-1 through 400-9 Mounting Assemblies must be installed on mounting bars, 7 inches of vertical space (four-mounting spaces) are required for relay-rack mounting. Type 400-10 through 400-13 Mounting Assemblies, however, are provided with mounting extensions located on the sides of the mounting assemblies and require only 6 inches of vertical rack space. Install the mounting assembly in a KTU apparatus case or on a relay rack (as described above) with mounting hardware provided.

universal shelf mounting

4.05 When a high degree of flexibility is required to provide for new circuit arrangements as well as circuit rearrangements, the 730 Dual Repeat Coil may be mounted in a Wescom Universal Shelf. The Universal Shelf permits all intermodule wiring and installer connections to be made at the front of the mounting assembly and provides maximum accessibility to these connections when changes are required. The Type 400UA-11 and 400UB-11 Universal Shelves provide mounting positions for up to 11 modules and are designed for mounting in a 19-inch relay rack. Type 400UA-13 and 400UB-13 Universal Shelves provide mounting positions for up to 13 modules and are designed for mounting in a 23-inch relay rack.

5. INSTALLER CONNECTIONS

5.01 When the 730 Dual Repeat Coil is installed in a Type 400 Mounting Assembly, it makes electrical connection to associated equip-

5.04 The 730 Dual Repeat Coil is also provided with strapping options W, X, Y, and Z. (See attached schematic diagram.) If a simplex signaling arrangement is required on any particular line, strap the strapping option (W, X,

Table 1. Installer Connections

REPEAT COIL 1 (XMIT)		REPEAT COIL 2 (RCV)	
56-PIN CONNECTOR ASSIGNMENT	CONNECT TO	56-PIN CONNECTOR ASSIGNMENT	CONNECT TO
55	TIP (LINE)	5	TIP 1 (LINE)
53	SX (TIP)	3	SX (TIP 1)
49	RING (LINE)	15	RING 1 (LINE)
51	SX (RING)	1	SX (RING 1)
41	TIP	7	TIP 1
43	A	9	A 1
47	RING	13	RING 1
45	B	11	B 1

ment through a 56-pin, wire-wrap card connector provided as part of the mounting assembly. Make all installer connections to this connector in accordance with Table 1.

5.02 Type 400UA-11 and 400UA-13 Universal Shelves provide terminal block locations above the mounting assembly, whereas Type 400UB-11 and 400UB-13 Universal Shelves provide terminal block locations below the mounting assembly. When the 730 Dual Repeat Coil is installed in a universal shelf, make all installer connections to these terminal blocks in accordance with Table 1.

CAUTION: Do not make any connections with power applied to the equipment or modules installed in the mounting assembly.

strapping options

5.03 The 730 Dual Repeat Coil is provided with a strapping option for 600 or 900 ohms (factory strapped for 600 ohms) on either side of either coil. See Figure 1 and the attached schematic diagram.

Y, or Z) associated with that line. The W and X options are strapped at the factory. If a duplex signaling arrangement is required on the drop side, remove the Y and/or Z straps. If a duplex signaling arrangement is required on the line side, remove the W and/or X straps and place an external capacitor across pins 3 and 1, and/or across pins 53 and 51 at the 56-pin rear connector.

5.05 The 730 Dual Repeat Coil is primarily designed to provide a 600 or 900 ohm terminating impedance on either side of the coil. In some instances a deliberate impedance mismatch is desired on the line for equalization. This is generally accomplished by arranging the line side of the transformer to have an impedance of 150 ohms. If this condition is required on a specific line proceed as follows:

- Make certain that the simplex strapping option on the line side (W or X) of the specific line is not strapped in.
- Install the 600 ohm straps of the specific line on the line side of the transformer (See Figure 2).

- (c) Place insulated wire straps across the tip lead and the ring simplex lead, and across the ring lead and the tip simplex lead of the line side of the specific line at the 56-pin rear connector.

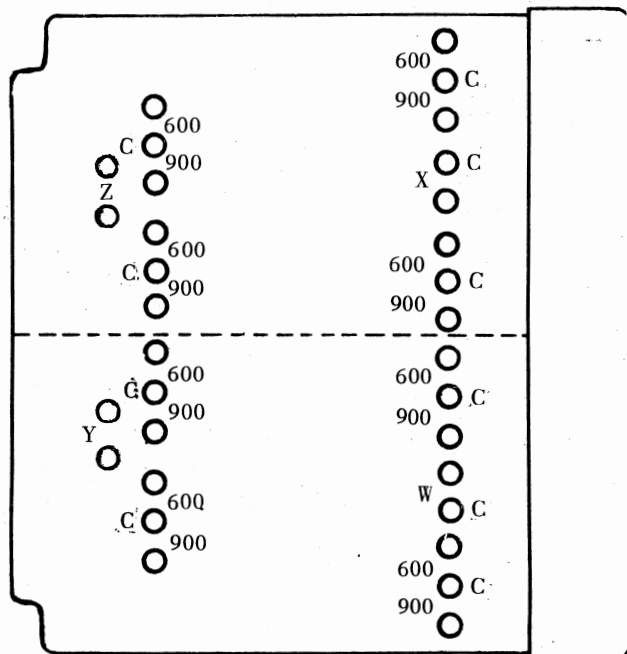


Figure 2. Strapping Post Location Diagram.

- (d) The line will now be reflecting 150-ohm impedance.

inserting modules

- 5.06 When all installer connections and strapping have been completed, insert the 730 Dual Repeat Coil module into the mounting

assembly. An identification label designated 730 is also provided on the front lower lip of the mounting assembly if the mounting assembly is factory wired.

CAUTION: Do not force any module into place. If you encounter excessive resistance while installing a module, remove the module and check the card guides and connector for improper alignment or the presence of foreign particles.

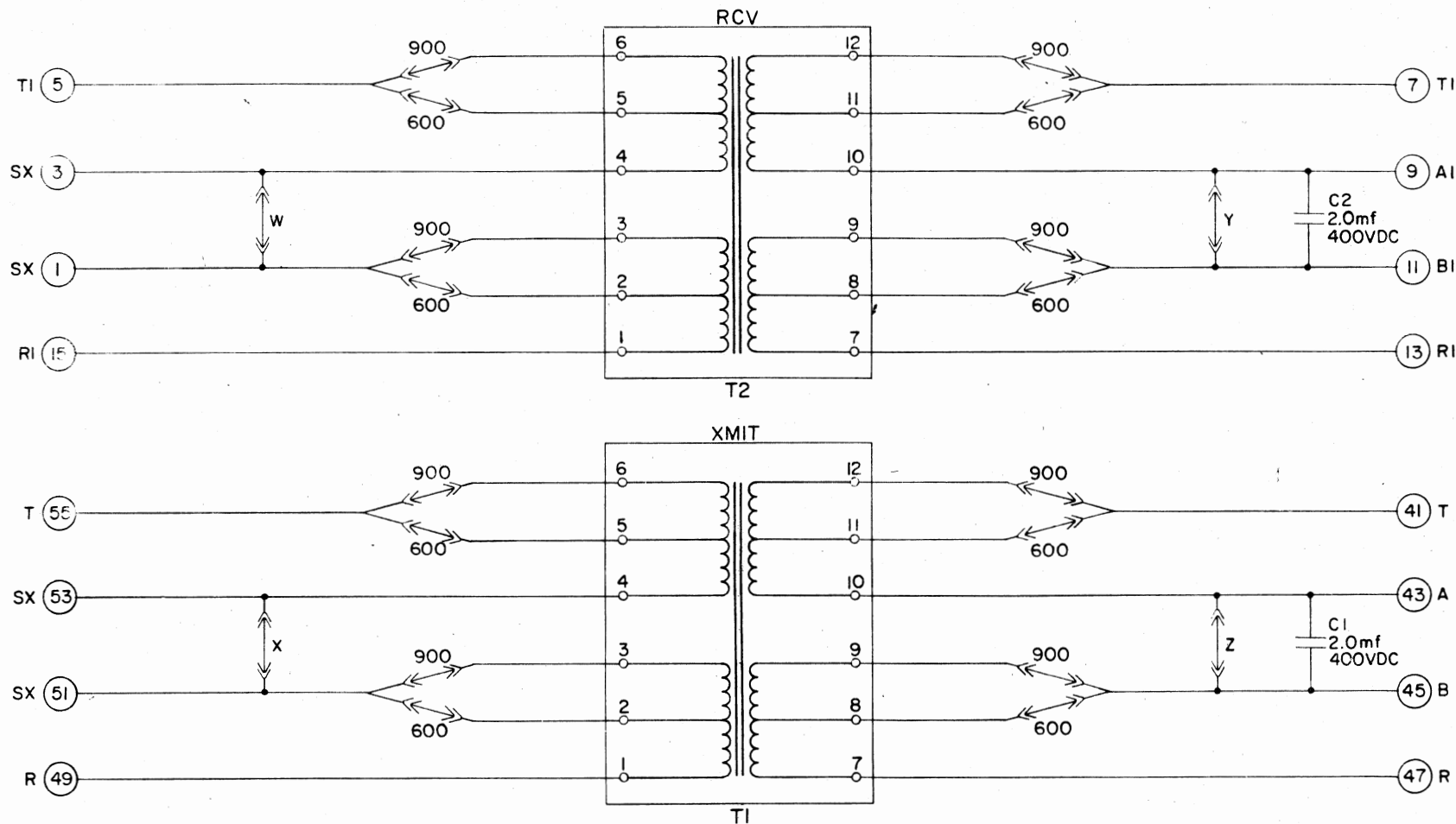
6. TESTING

- 6.01 If trouble is encountered with the operation of the 730, verify that all installer connections have been properly made in accordance with Table 1 and that all options have been conditioned as required. Make certain that the module is making good connection with the mounting assembly card connector; remove and reinsert the module. If technical assistance is required, contact Wescom Customer Service Department by calling 312-971-2010 or TWX 910-695-4735.

Canadian Customers: 416-742-0236 or TWX 610-492-4367.

- 6.02 Field repairs involving the replacement of components within a module are not recommended. If a module is found to be defective, contact Wescom, Inc., by telephone or TWX, for instructions regarding replacement or repair. If a replacement module is required, it will be shipped the fastest way, or as specified by the customer. Upon receipt of a replacement module, return the defective module, using the shipping label provided, to Wescom, Inc., 501 Rogers Street, Downers Grove, Illinois 60515.

Canadian Customers: Wescom Canada, Ltd., 87 Brydon Drive, Rexdale, Ontario, Canada.



NOTE:
UNLESS OTHERWISE INDICATED, ALL
MODULES ARE SHIPPED STRAPPED
FOR 600 OHMS WITH OPTIONS W
AND X CONNECTED AND OPTIONS Y
AND Z OPEN.

B 5-24-71		ECO 1796		A.J.M.	
A 1-10-71		RELEASED TO PRODUCTION		A.J.M.	
DATE		REVISION		BY	
MATEL					
FINISH					
TOLERANCES UNLESS OTHERWISE SPECIFIED					
.X $\pm$.030		.XXX $\pm$.005		FRACTIONAL $\pm$ 1/32	
.XX $\pm$.010					
DESCRIPTION				SCHEMATIC DIAGRAM FOR	
				MODEL 730	
				DUAL REPEAT COIL MODULE	
DRW. NO. 191-073000				ISSUE 1	
SCALE NONE				DATE 1-10-69	
DRW. BY YL		CHECKED BY MJB		FINAL APPR. MJB	
WISCOM INC.				SIZE B	
				DR. ROGERS ST.	
				DOWNERS GROVE, ILL.	

191-073000 SCHEMATIC HISTORY

ISS/REV	ECO NO.	DATE	CHANGE	REASON	ADDENDUM
1/A		1/71	Release to production		not required
1/B	1796	5/71	Changed numbering of the schematic drawing.	To conform to Wescom's present numbering format.	not required