Westinghouse

TYPE JY TEST METER UNIT
S#867952

INSTRUCTIONS

CAUTION

Be sure range switches are on maximum voltage tap for voltmeters and on "short" position for milliammeters before using the meter panel.

APPLICATION

The Type JY test meter unit is used to measure the voltages and currents required for proper adjustment and maintenance of the various combinations of type JY power line carrier equipment assemblies.

CONSTRUCTION AND OPERATION

The dimensions of the test meter unit are shown in Fig. 2. The meters, range switches and jacks are mounted on a metal panel which forms the front of a metal box which protects the components on the rear of the panel. This panel and case fit into a holder designed for mounting on a standard Type JY 19 inch rack frame. A handle with a latch is mounted at each end of the meter panel and securely locks the test meter unit in its holder. The unit may be removed from the rack frame for use at any location, and may be reversed in the holder for rear-of-panel testing.

The test meter unit has a five-range d-c milliammeter, a four-range radio-frequency milliammeter, and a four-range d-c or a-c voltmeter. The resistance of the voltmeter is 1000 ohms per volt.

The available ranges are as follows:

D-C Milliamperes:	0 to 0.15, 0 to 1.5, 0 to 15, 0 to 150, 0 to 1500 and Short.
R-F Milliamperes:	0 to 100, 0 to 300, 0 to 1000, 0 to 3000 and Short.
D-C or A-C Volts:	0 to 1.5, 0 to 15, 0 to 150 and 0 to 1500 and "Off".

A capacitor is connected to a pin jack and one voltmeter jack so that a-c voltages may be measured in circuits where d-c voltage is present. Tip jacks and test leads, with a standard plug, are provided for d-c current measurements. Tip jacks and test leads, with prods, are provided for voltage measurements. Combination binding post jacks and a shielded lead with a double plug are provided for radio-frequency current measurements. A diagram of the internal connections of the test meter unit is shown in Fig. 1.

The test leads for use with the radio-frequency ammeter consist of a twisted, shielded pair about 6 feet long. The ammeter test leads are about 6 feet long, and the voltmeter test leads are also 6 feet long.

The metering jacks on the various Type JY carrier components are grouped together in the individual component, and numbered to correspond with the jack numbers on the schematic diagrams. Most of the jacks are of the "current" type, and the voltage jacks are connected across low output circuits so that if the ammeter is plugged accidentally into the voltage circuits, it will not be damaged as long as the ammeter is on the highest range.

INSTALLATION

Unpack and mount the test meter unit on a standard relay rack in the equipment assembly. Screws for mounting the unit are contained in a bag tied to one handle of the unit. The unit should be mounted in a location to give maximum visibility of the instruments as well as accessibility for measuring voltages and currents on the units of the assembly.

When the test meter unit is supplied as part of a Type JY power line carrier equipment assembly, it must be mounted in the position specified. This insures that the cable of inter-connection wires between the other units will have the proper length.

ADJUSTMENTS AND MAINTENANCE

Zero adjusting screws are provided on the three instruments used in this Unit. To prevent damage to the instruments, be very careful so as not to overload the instrument circuits. This is particularly true of the RF ammeter circuit. Make certain that the range selected is high enough for the quantity to be measured. When in doubt, start with the highest range and change the range switch only after connections have been made.

For current measurements, where the power is to be applied after the meter is connected, place the range switch in the SHORT position. Then change to the correct range after the equipment is in operation.

If care is exercised to prevent overloading the instruments, no maintenance or repair will normally be required. However, if failures occur due to overload or other accidental causes, the rear cover of the test meter unit can be removed to take out the damaged part. It is held in place by four screws on the panel. Remove this cover carefully so as not to damage the components mounted on the rear of the panel. Disconnect the damaged instrument before checking its associated resistors or shunts.

RENEWAL PARTS

When ordering renewal parts for this unit, include the following data from the name-plate:

(1) The name of the unit.

(2) The style or DL number.

(3) The serial number.

PARTS LIST

DIAGRAM SYMBOL	NUMBER REQ'D.	FUNCTION	RATING
		CAPACITORS	
C-1	1	D-C Block	0.1 MFD. 600 V. d-c
		METER JACKS	
J-1	1		PIN
J-2	1		PIN
J-3	1		PIN
J-4	1		PIN
J-5	1		PIN
J-6	1	RF Milliamps.	Double
		INSTRUMENTS	
M-1		RF Milliamperes	100, 300, 1000, 3000
M-2		D-C Milliamperes	.15,1.5,15,150,1500
M-3		A-C D-C Volts	1.5,15,150,1500
		RESISTORS	
R-1	1	Part of M-1	3000 MA-RF Shunt-0.3 Ohms
R-2	1	" " "	1000 " " " 0.6 "
R-3	1	" " "	300 " " " 2.1 "
R-4	1	" " M-2	1500 " DC " 1.0 "
R-5	1	" " "	150 " " " 4.5 "
R-6	1	" " "	15 " " " 45 "
R-7	1	" " "	1.5 " " " 450 "
R-8	1	" " "	1500 " " " 1.0 "
R-9	1	" " "	Instrument Compensator 4165 Ohms
R-10	1	" " M-3	1500 Volt, 300,000 Ohms Series
R-11	1	" " "	" " " " "
R-12	1	" " "	" " " " "
R-13	1	" " "	" " " " "
R-14	1	" " "	" " " " "
R-15	1	" " "	" " 150,000 " "
R-16	1	" " "	150 " 135,000 " "
R-17	1	" " "	AC Compensating-13,500 Ohms
R-18	1	" " "	" " 150 "
R-19	1	" " "	" " 15 "
R-20	1	" " "	1.5 V. AC 1500 Ohms Series
			15 V. AC 1500 Ohms Series
		SWITCHES	
S-1	1	RF Milliamperes	5 Position - 2 Deck.
S-2	1	DC "	6 " " "
S-3A	1	AC-DC Volts	9 " Part of S-3
S-3B	1	" " "	" " " "
S-3C	1	" " "	" " " "
		TEST LEADS	
	1	RF Milliamperes	
	1	DC Milliamperes	
	1	AC-DC Volts	

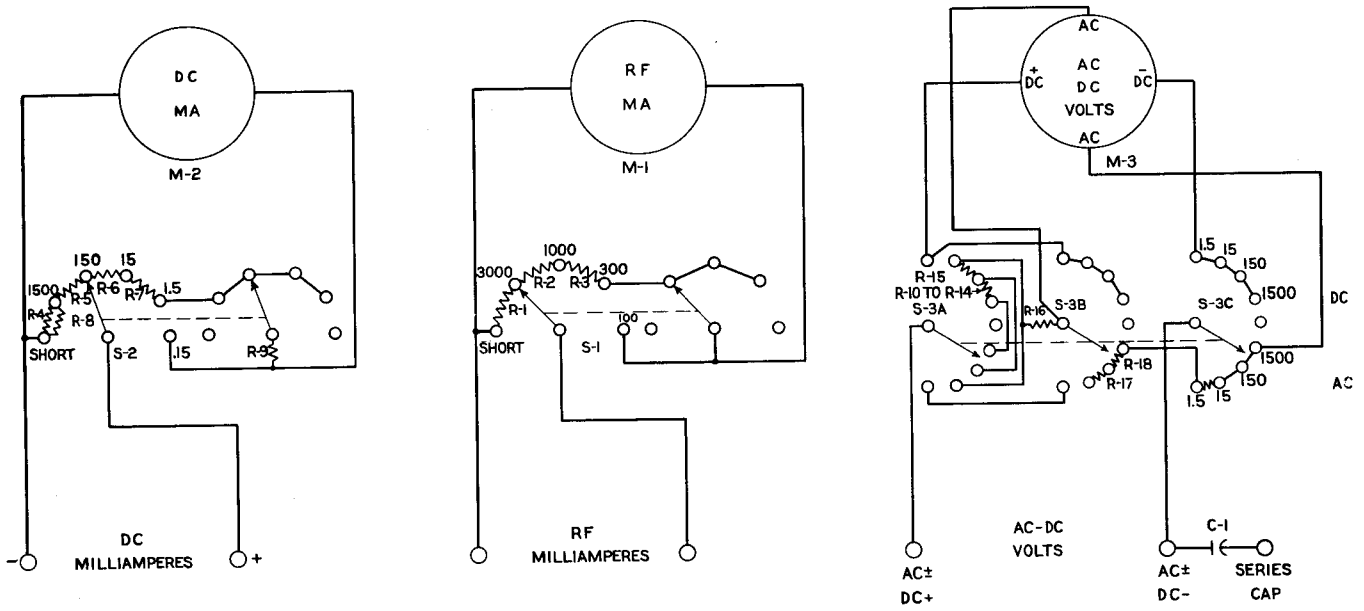

Figure 1
Internal Schematic of the Type JY Test Meter Unit.

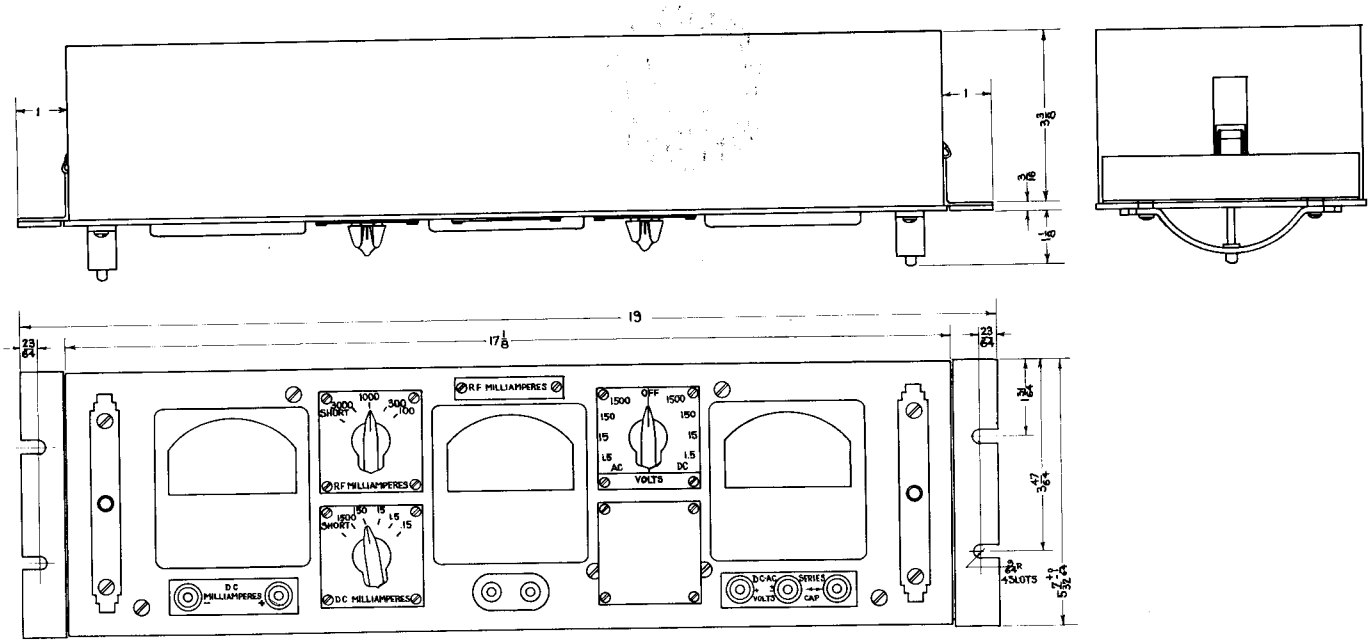

Figure 2
Outline of the Type JY Test Meter Unit.

PRINTED IN U.S.A.

WESTINGHOUSE ELECTRIC CORPORATION
Meter Division, Newark, N. J.