TEST OF ORIGINATING SENDER TEST FRAME

1. GENERAL INFORMATION

1.1 Refer to Section 161 for general information on the originating sender test. This section describes the following tests:

RESISTANCE MEASUREMENTS
FUSING
CONTACT PROTECTION

1.2 Test Procedure: These tests should be made before the routine tests are made on the originating senders.

2. TEST EQUIPMENT

2.1 Test Sets and Accessories

Amt	Code	Description	With ITE
1	ITE-1883	Wheatstone Bridge	
1	ITE-8253	Contact Protection Test Set	4023

3. RESISTANCE MEASUREMENTS

3.1 Using the Wheatstone Bridge as described in Section 2 of Handbook 50, check the following resistance paths before inserting the fuses:

Unit	Resistance	Connections X1	Connections X2	Rel. or Key Oper.	Res. Measurement Rated	Res. Measurement Min.	Res. Measurement Max.
Con-0103	A	7T(CA2)	12B (CI) of SG TST Unit	KP	65	64	66
"	B	5B(CA3)	10B (CI) of SG TST Unit	KP	65	64	66
"	C,D,E,F	2B(OL)	1T(CA3)		1710	1693	1730
D-PLS (0105)	DL,DM,DN, in series with res. DK in par. with ret. coil (R)	4T(S)	4T(SY-1)	PBX SURGE Ins. 4 & 7(S) When Ins. is removed res. should measure 1150 ohms.	1455	1440	1470
"	L & M	4T(S)	4T(SY-1)	26 MAX BR Ins. 4 & 7(S)	1500	1485	1515
"	DF,DG,DH & DJ	"	"	7 PPS MIN BR	1710	1693	1727
"	E,T,U,V,W & X	"	14T(PLS)	"	1790	1772	1808
Rev. Pls. (0108)	B,C,D,E & K Comp. Res.	3B(IP) of Inc. & Final Sel.	3B(OB)	OFF CR 0	0	0	0
				300	300	297	303
				600	600	594	606
				700	700	693	707
				900	900	891	909
				1000	1000	990	1010
				1300	1300	1287	1313
				1600	1600	1584	1616
Rev. Pls.	B,C,D,E & F Comp. Res.	3B(IP) of Inc. & Final Sel. Cont.	1B(IA) of Inc. & Fin. Sel. Cont.	B-OFF-CR 0	0	0	0
				300	300	297	303
				600	600	594	606
				700	700	693	707
				900	900	891	909
				1000	1000	990	1010
				1300	1300	1287	1313
				1600	1600	1584	1616
+Rev.	G,H & J	1T(SY) of Inc. & Final Sel. Cont.	8B(CIP) of PCI Reg.	B-OFF-CR 0	0	0	0
				300	300	297	303
				600	600	594	606
				700	0	0	0
				900	900	891	909
				1000	300	297	303
				1300	600	594	606
				1600	900	891	909

Unit	Resistance	Connections X1	Connections X2	Rel. or Key Opr.	Option	Res. Measurement Rated	Min.	Max.
REV PLS	BC	1T(SP)	F fuse stud	SP Rel.	"W"	10,000	9,500	10,500
					"X"	930	920	940
IF SEL CONT (0113)	G	9T(FR) of OFL CONT SUBS unit	4(RV2) of OFL CONT SUBS unit	MTG key		600	594	606
"	F & H	"	"	-		1,560	1,545	1,575
"	T in series with TC & TTG relays	1T(SY2)	J fuse stud	-		25,300	24,635	26,000
"	C, B, T1 in series with TC & MTG-1 relays	"	"	MTG key		14,475	14,138	14,820
"	A & T2	5B(N4)	"	-		7,635	7,559	7,711
PCI REG Unit (0117)	Res. E in series with B, C, D & T res. & TG relay	1T(FAS)	N fuse stud	-		28,548	28,141	2,900
"	Res. T1 in series with res. B, C, D & T & TG relay	5B(FAS)	"	-		40,150	39.628	40,700
"	A & BF	9B(CIP)	"	-		945	939	951
KP (0123)	A	9B(CTB)	Grd.	D2		165	163.5	166.5
"	B	"	"	KR & KR1		620	612	626
"	DB	7B(C)	24 volt A fuse stud	-		385	381	389
"	AA	2B(6)	Grd.	-	"Y"	124	122.8	125.2
					"Z"	112	111	113
"	AD	"	"	SKP	"S"	150	148.5	151.5
					"T"	130	128.7	131.3
"	AE	2T(6)	"	"	"S"	150	148.5	151.5
					"T"	130	128.7	131.3
"	AB	"	"	-	"Y"	124	122.8	125.2
					"Z"	112	111	113
"	AC	2B(0)	"	-	"Y"	245	242	248
					"Z"	230	227	233
"	BA & C	2B(4)	S fuse stud	-		665	661	669
"	BC, BD & BE in parallel	2B(3)	"	-		100	99	101
	B1 & BH	4T(CTB)	"	-	"R"	9,050	8,960	9,140
OFF SEL (0125) CONT-KP	AA	1B(WO)	Grd.	-		1,170	1,158	1,182
	BB & C	1B(G)	T fuse stud	-	"Z"	5,400	5,346	5,454
	"	"	"	-	"Y"	3,800	3,762	3,838
OFL (0127) CONT-KP	A	3T(TC1)	1B(TC)	-	"L"	2,140	2,129	2,151
SG TST (0131)	AC	8T(GH)	Grd.	-		830	822	838
"	A	2B(CH)	2T(CH1)	-		700	693	707
"	BA	10(CI1)	AC fuse stud	-		480	475	485

Unit	Resistance	Connections X1	Connections X2	Rel. or Key Opr.	Option	Res. Measurement Rated	Res. Measurement Min.	Res. Measurement Max.
SG TST	C	9B(CI)	Grd.	2-INC	"T"	510	505	515
"	C Short Circuited	"	"	2-INC, TCT and (SL) Rel	"W"	0	-	-
"	D	"	"	4-INC	"T"	1467	1452	1482
"	E	"	"	5-INC	"T"	3100	3069	3131
"	AA	1T(SL)	"	-		191	189	193
"	AA Short Circuited	"	"	TCT		0		
FS-DPLS CONT (0111)	A,B,C,D,E and (CT) Rel	2T(CN4)	Grd.	-	"E"	8504	8949	8059
"	A,B,C,D,E, F and (CT) Rel	"	"	-	"B"	8500	8945	8055
"	B,C,D,E	"	"	(CN3)	"E"	3574	3610	3538
"	B,C,D,E,F	"	"	"	"B"	3570	3606	3534
"	C,D,E	"	"	(CN6)	"E"	2064	2085	2043
"	1/2 C,D,E,F	"	"	"	"B"	1925	1944	1906
"	1/2 D,E	"	"	(SGT-NO) Key (CN3) Rel	"E"	294	297	291
"	E,F	"	"	"	"B"	290	293	287
"	1/2 E	"	"	(SGT-OPR) Key (CN3) Rel	"E"	194	196	192
"	1/2 E,F	"	"	"	"B"	180	182	178
CODE TEST (0133)	A,AA	2B(RL) of D-PLS Ckt.	"	(TPO)		3330	3297	3363
"	B,AB	"	"	(TPNO)		4520	4475	4565

4. FUSING

NOTE: Block operated relay EC to prevent battery on fuse post A from feeding back to fuse post W.

4.1 Check that each fuse post is free of grounds.

4.2 Using fuses of correct type as indicated by circuit and equipment drawings, install the following fuses, one at a time, and check that each is associated with the correct circuit and is free from crosses with other unfused circuits.

Fuse		Equipment		
A	Wdg., relay	(CA)	5B	CONN CKT
B	" sel. mag.	(0-9)	"	"
C	" relay	(ST)	13B	CODE KEY & DIAL PLS
D	" relay	(RL)	3B	CODE KEY & DIAL PLS
E	" relay	(PT)	6B	REV PLS
F	" relay	(PL)	11B	" "
G	" selector	(DP)		DIAL PLS CONT
H	" relay	(P3)	3B	" " "
J	" selector	(SP)		INC-FIN CONT
K	" selector	(SP)		PCI DP CONT
L	Wdg., relay	(B)	6B	PCI REG
M	" relay	(A5)	6B	" "
N	" relay	(DR1)	10B	" "
P	" selector	(DP)		OFL CONT
R	" selector	(DP)		OPR-CL
S	" selector	(KP)		KEY PLS
T	" selector	(SP)		OF SEL CONT
U	" selector	(SP)		OFL CONT
V	" selector	(SP)		OPR-CL
W	" relay	(C)	12B	GRP TST
X	" selector	(CP)		
Y	" relay	(D8)	5B	CODE TST
AA	" register	(RST)	RT1	
AB	" selector	(CIP)		PCI REG
AC	" lamp	(SEL)		
TBS	48V Terminal			
¢LT1	T Condenser			CODE KEY & DIAL PLS

¢ Located on Misc. R.R. Bay

5. CONTACT PROTECTION AND ABSORPTION CIRCUITS

5.1 Following the method outlined in Handbook 50, Section 2, check the condenser-resistance circuits as follows:

Circuit	Condenser	Res. In Ohms	Test at Rel. Contact	Remarks
D-PLS - 0106	A 2 mf	AA 600	2B (R1)	Block R1 oper.
" "	B "	AD 600	2T (R1)	" " "
" "	C "	AC 600	4T (R1)	" " "
" - 0105	TC 1 mf	D 250	1T & 2T (RL)	Check by charging and discharging network. Block relay (RL) oper.
" - 0106	D 1 mf	AD 1340	15 (CTG)	
REV PLS - 0108	A 2 mf	AC 600	4B (BT)	Insulate #2 of P2
" "	B 2 mf	1/2 AB 600	5T (BT)	
" "	C 2 mf	1/2 AB 600	3T (BT)	
" "	D 1 mf	AA 1340	15 (CHK)	Insulate #2 of P2
FS D PLS CONT - 0111	A 0.5 mf	BC 800	2B (G)	
IF SEL CONT - 0113	A 0.5 mf	BA 800	1T (G)	
PCI D PLS CONT - 0115	A 0.5 mf	BA 800	6T (G)	
	B 0.5 mf	BB 800	6B (G)	
PCI-REG - 0117	A 0.5 mf	BA 800	2T (G)	
" "	B 0.5 mf	AB 1000	1 (MG)	Ins. 2 & 3B (UA)
" "	C 0.5 mf	1/2 AA 1000	2 (SN+)	Ins. 2 & 3B (W)
" "	D 0.5 mf	1/2 AA 1000	2 (SN-)	Ins. 5 & 6B (UA1)
OFL CONT SUB - 0119	A 0.5 mf	BA 800	2T (G)	
OPER CL SUB - 0121	DP 0.5 mf	BA 800	2B (G)	
KP - 0123	A 0.5 mf	BB 800	2T (DC)	Insulate 3B (KR)
OFF SEL CONT - 0125 KP	A 0.5 mf	BA 800	4T (G)	
OFL CONT LP - 0127	A 0.5 mf	BA 800	3T (G)	
OPER CL CONT - 0129 KP	A 0.5 mf	BA 800	2T (G)	
SEND GRP TEST - 0131	A 0.5 mf	AD 300	2T (XB)	
CODE TST - 0133	CP 0.5 mf	BA 800	2B (G)	

5.2 Check that the CAP PC1 key, when operated, connects the 1.5 mf. condenser (E) across the fundamental tip and ring of the PC1 Register Circuit. This connection may be checked by operating keys CAP PC1 and B-OFF CR(0), blocking relays OG and AS1 operated, insulating contacts 2T and 2T of relay UA-1 and charging and discharging the condenser at contacts 10T and 8B of relay (CIP). Apply ground to 10T (CIP) and battery thru a test receiver to 8B (CIP); then apply ground thru a test receiver to 8B (CIP) and a click should be heard. Remove the insulation from relay UA1 and check that the condenser is shunted by PC1 register relays MG, SN-, and SN+.

→ Arrowed lines indicate new or changed information.

R. E. RAHMES

Engineer of Installation

Reason for Reissue:
To make minor changes.

Replaces Section 161.1 of 8-17-44.