WIRING DIAGRAM PACKAGE FOR THE 186627 SET LOGIC ASSEMBLY

WDP0238

DRAWING NO.	SHEET NO.	DESCRIPTION	ISSUE NUMBER 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1051SD	ALL	186627 SET LOGIC ASSEMBLY (SCHEMATIC DIAGRAM)	1	2	2	2	2	2	2	3	4																					
186627	-	SET LOGIC ASSEMBLY	1	1	2	3	4	4	4	4	4																					
186637	-	CIRCUIT CARD ASSEMBLY	1	1	1	1	1	1	2	2	2																					
303826	-	CIRCUIT CARD ASSEMBLY	1	1	2	3	4	5	6	7	8																					
1051CD	ALL	186627 SET LOGIC ASSEMBLY (CIRCUIT DESCRIPTION)	1	1	1	1	1	1	1	1	2																					

TELETYPE CORPORATION

20631-R NOTE : THE LAST COMPLETED COLUMN INDICATES THE LATEST ISSUE NUMBER OF WDP.

TELETYPE CORPORATION

5555 TOUHY AVENUE SKOKIE, ILLINOIS 60076
PHONE 982-2000 AREA CODE 312 TWX 910-223-3611

December 28, 1973

ERRATA SHEET
WDP0238 (ISSUE 9)
186627 SET LOGIC ASSEMBLY

The following circuit card changes have been made to the 303826 circuit card used in the 186627 Set Logic Assembly. These changes increase the noise immunity of the Disconnect and Data Terminal Ready Timers and are not included in the enclosed copy of 1051SD included in WDP0238.

The following sheets of 1051SD are affected as follows:

Sheet	Description
B2 (FS-2)	A 0.01 ufd. capacitor (C4) has been added between the GATE and CATHODE of SCR,Q6.
B2 (FS-2)	A coil suppression diode (CR15) has been added between J3-11 (anode) and +24VDC supply (cathode).
B3 (FS-3)	A 0.005 ufd. capacitor (C5) has been added between the GATE and CATHODE of SCR,Q4.

C1 (App. Fig.2) Add the following components:

Desig.	Loc.	Code
C4	2C5	319999
C5	3C5	171567

C3 (App. Fig.6) Add the following component:

Desig.	Loc.	Code
CR15	2C6	312341

The changes just described will be reflected in Issue 10 of WDP0238.

SHEET INDEX

CONTENTS	SHEET NO.	ISSUE NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	SHEET NO.
SHEET INDEX SUPPORTING INFORMATION	A1	1	2	3	4																									A1
FS-1 SIGNAL LINE CIRCUITRY	B1	1	1	1	1																									B1
FS-2 CONTROL CIRCUITRY ON-DATA SET READY-OFF	B2	1	2	3	4																									B2
FS-3 CONTROL CIRCUITRY DATA TERMINAL READY-LOCAL	B3	1	1	3	4																									B3
FS-4 BREAK DETECTOR CIRCUITRY	B4	1	1	1	1																									B4
FS-5 DISTRIBUTOR CIRCUITRY																														B4
FS-6 POWER SUPPLY DISTRIBUTION	B5	1	1	1	1																									B5
FS-7 TEST CIRCUITRY																														B5
FS-8 ANSWER BACK CIRCUITRY																														B5
APP. FIG. 1, 2, 3, 4	C1	1	1	1	1																									C1
APP. FIG. 5	C2	1	1	1	1																									C2
APP. FIG. 6, 7, 8, 9	C3	1	2	2	3																									C3
CIRCUIT NOTES EQUIPMENT NOTES INFORMATION NOTES	D1	1	1	1	2																									D1
SC1 ORIGINATING STATION	E1	1	1	1	2																									E1
SC2 ANSWERING STATION																														E1
SC3 TERMINATE																														E1
SC4 LOCAL	E2	1	1	1	1																									E2
SC5 OUT OF SERVICE																														E2
SC6 BREAK DETECTION																														E2

SUPPORTING INFORMATION

CATEGORY	NO.
WIRING DIAGRAM PACKAGE FOR THE 186627 SET LOGIC ASSEMBLY	WDP 0238
SCHEMATIC WIRING DIAGRAM FOR FOR MODEL 33 ASR & KSR SETS USING THE UCC29	8163 WD
BREAK DETECTION AND INDICATION MODIFICATION KIT	186630

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND UPDATED EACH TIME ANY SHEET OF THE DRAWING IS REISSUED OR A NEW SHEET IS ADDED.
3. THE LAST COMPLETED COLUMN INDICATES THE LATEST ISSUE NUMBER OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NO.
5. ISSUE DATES WILL BE SHOWN ON THE SHEET INDEX ONLY.

REVISIONS

ISSUE	DATE	AUTH. NO.
1	6-26-70	20631-R
2	9-22-70	912
3	4-26-71	2804
4	2-2-73	6993

WDP

186627

SET LOGIC

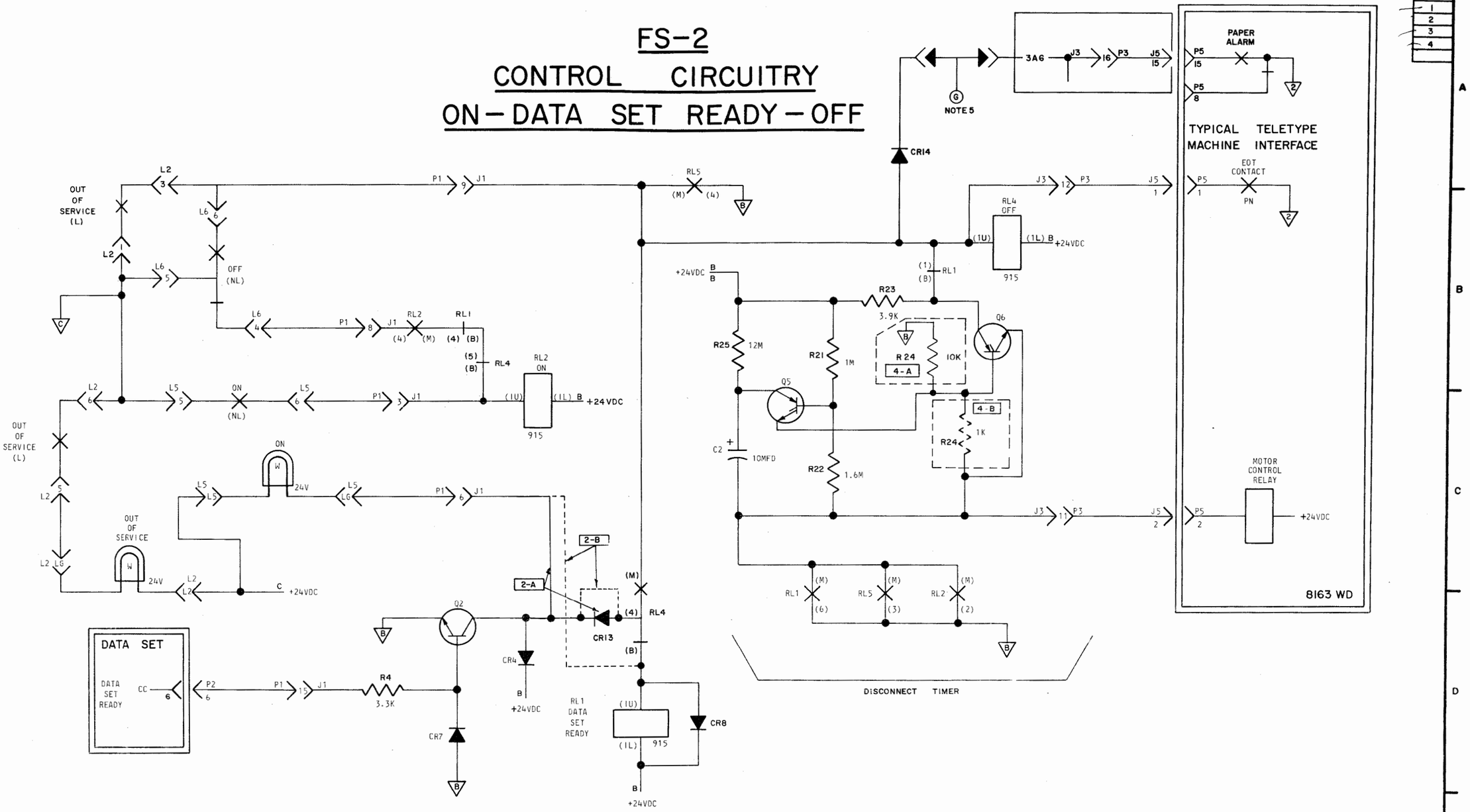
ASSEMBLY

APPROVALS		
PROJ. SUPV. TJC	PROJ. DIR. RRS	MFG. REL. COMPL.
ENGR. A. S.	DSGNR. A. S.	
DRN. C.E.C.	DATE 10-27-69	
R&D FILE 2-165.152AA		
S-NUMBER 61,773S		

TELETYPE

1051 SD — A1

FS-2
CONTROL CIRCUITRY
ON-DATA SET READY-OFF



SHEET NOTES:

1. CONNECTOR CROSS-REFERENCE

1051 SD	8163 WD
P4	CAJ
P5	CAH

2. TO PROVIDE DIRECT CONTROL OF THE "ON" LIGHT BY THE "CC" LEAD

3. WIRING STATUS:
   RECTANGULAR BOX INDICATES HISTORY OF WIRING CHANGES
   [2C-B] B - DENOTES WIRING BEFORE CHANGE
   NOTE NUMBER
   [2C-A] A - DENOTES WIRING AFTER CHANGE

4. ON ISSUE 2, R24 WAS IK OHMS AND NOT CONNECTED DIRECTLY TO GROUND.

5. AT 303826 ASSEMBLY ISSUE 8, OPTION G AND CR14 WERE ADDED. REFER TO 1051CD FOR ADDITIONAL DATA. REFER TO EQUIPMENT NOTE 203 TO ENABLE OPTION.

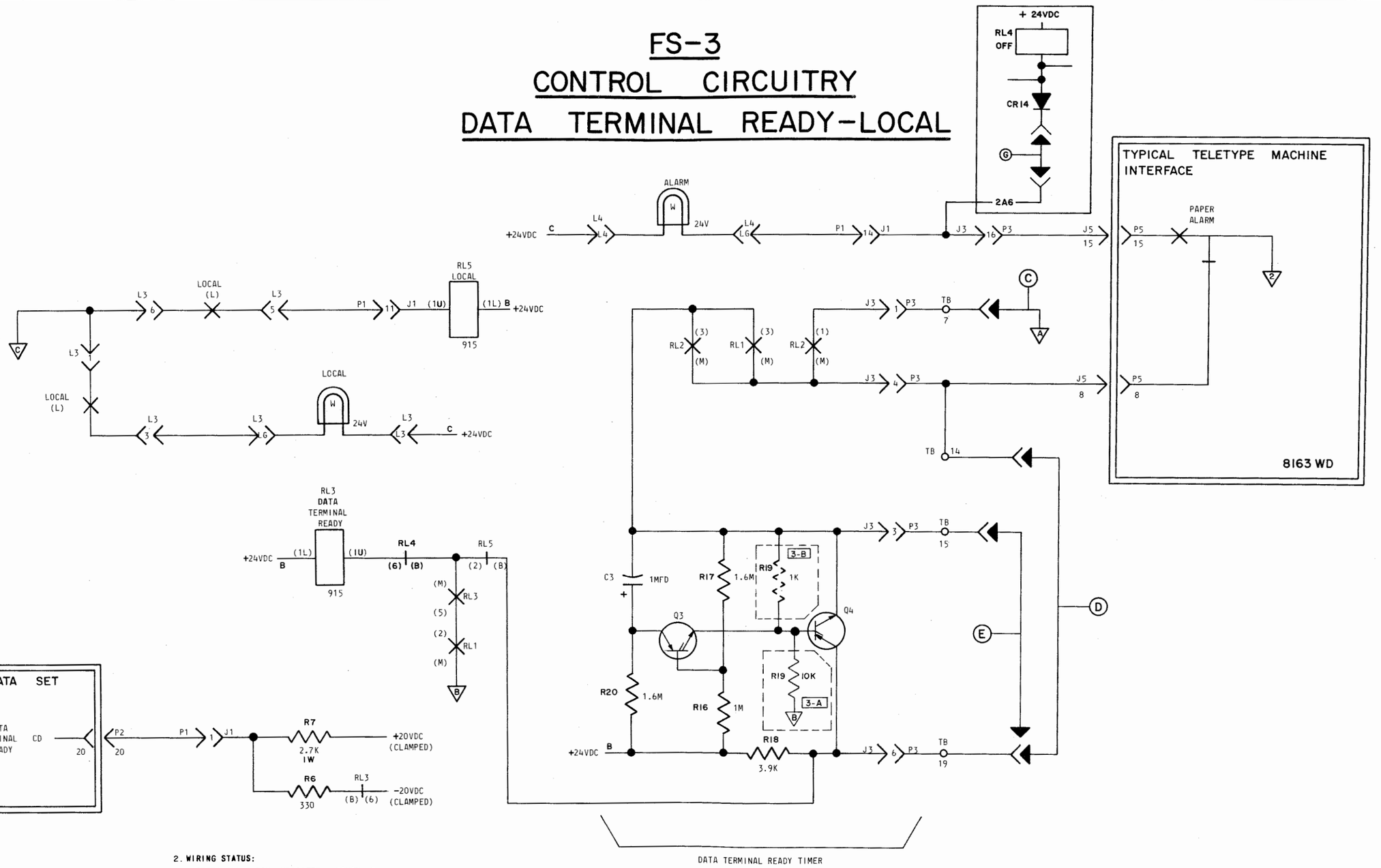
ISSUE 1 2 3 4

186627 SET LOGIC ASSEMBLY	TELETYPE 1051 SD — B2

TC 640 (5-69)

FS-3
CONTROL CIRCUITRY
DATA TERMINAL READY-LOCAL

ISSUE
1
2
3
4



SHEET NOTES:

1. CONNECTOR CROSS-REFERENCE

1051SD	8163WD
P4	CAJ
P5	CAH

2. WIRING STATUS:

RECTANGULAR BOX INDICATES HISTORY OF WIRING CHANGES

00-B — NOTE NUMBER — 00-A

B - DENOTES WIRING BEFORE THE CHANGE DESCRIBED BY THE DESIGNATED NOTE ENTERED THE PRODUCT.

A - DENOTES WIRING AFTER THE CHANGE DESCRIBED BY THE DESIGNATED NOTE ENTERED THE PRODUCT.

3. ON ISSUE 1, R19 WAS 1K OHMS AND NOT CONNECTED DIRECTLY TO GROUND.

WDP

186627
SET LOGIC ASSEMBLY

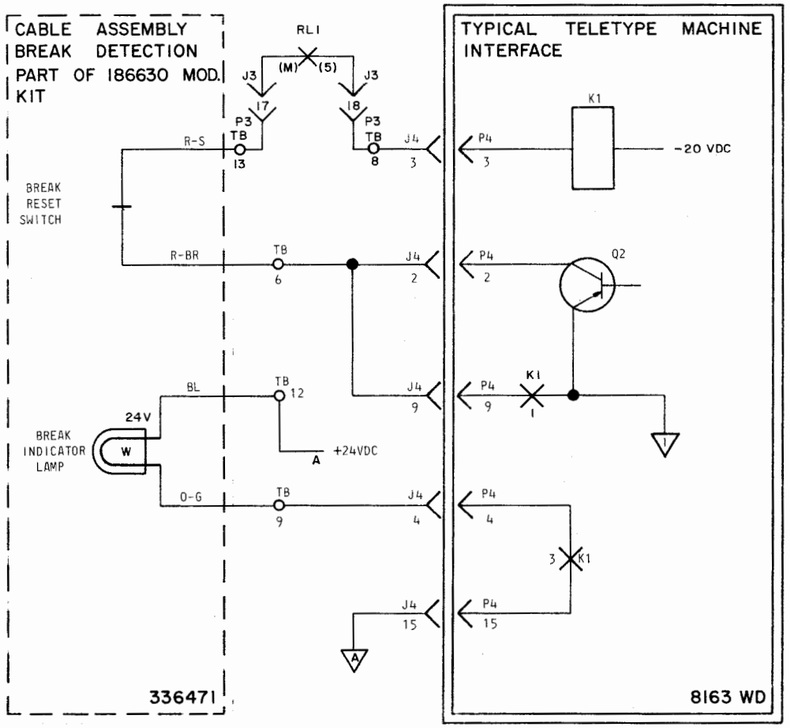
TELETYPE

1051 SD-B3

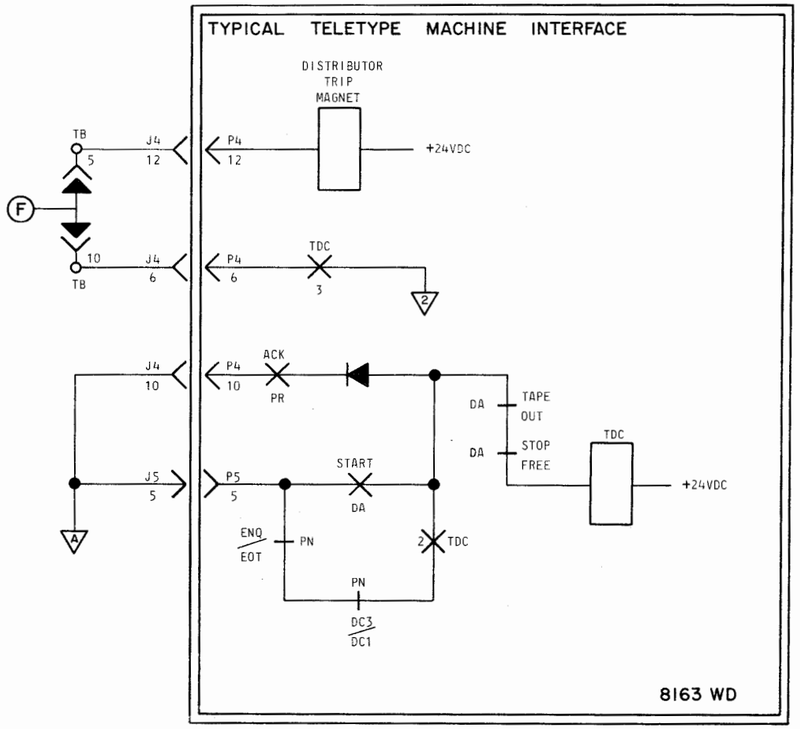
TC 640 (3-69)

ISSUE 1

FS-4
BREAK DETECTOR CIRCUITRY



FS-5
DISTRIBUTOR CIRCUITRY



SHEET NOTES:
1. CONNECTOR CROSS-REFERENCE

1051SD	8163WD
P4	CAJ
P5	CAH

186627
SET LOGIC
ASSEMBLY

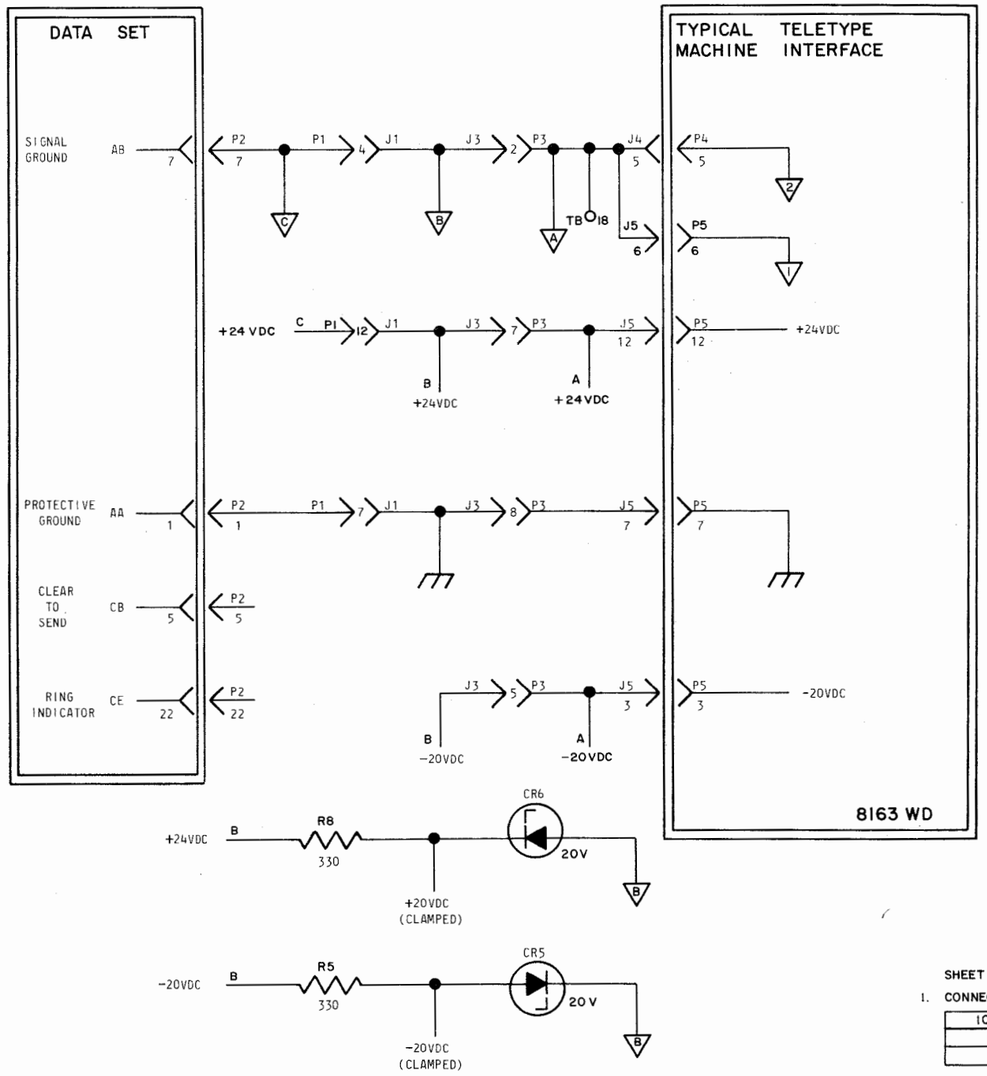
TELETYPE

1051 SD – B4

TC 640 (3-69)

ISSUE 1

FS-6
POWER SUPPLY DISTRIBUTION



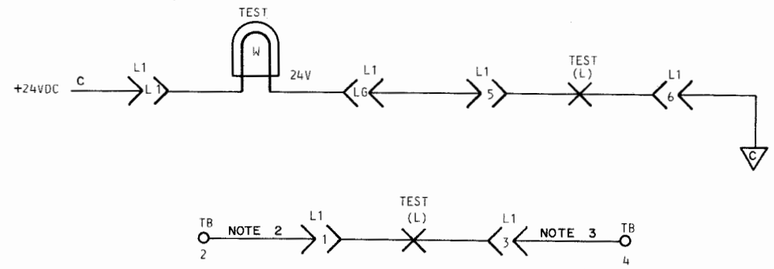
SHEET NOTES:

1. CONNECTOR CROSS-REFERENCE

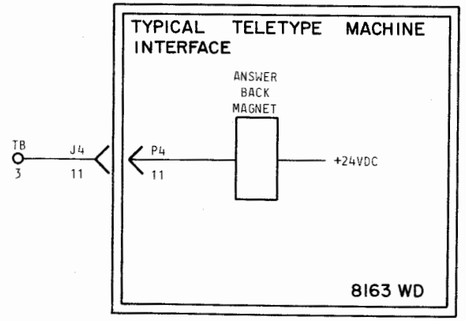
1051 SD	8163 WD
P4	CAJ
P5	CAH

2. CONNECT THE PURPLE WIRE OF THE 336601 CABLE ASSEMBLY TO TB 2.
3. CONNECT THE SLATE WIRE OF THE 336601 CABLE ASSEMBLY TO TB 4.

FS-7
TEST CIRCUITRY



FS-8
ANSWER BACK CIRCUITRY



186627 SET LOGIC ASSEMBLY	TELETYPE 1051 SD—B5

TC 640 (3-69)

ISSUE
1

APP. FIG. 1

RELAY

DESIG	RL1		RL2		RL3		RL4		RL5		DESIG
CODE	336953		336953		336953		336953		336953		CODE
OPTION											OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
6	EBM	2D5	EBM		EBM	3D3	EBM	3C3	EBM	1B3	6
5	EBM	4B2	EBM		EBM	3C3	EBM	2B3	EBM	1C5	5
4	EBM	2B3	EBM	2B3	EBM		EBM	2D4	EBM	2A4	4
3	EBM	3B5	EBM	3B4	EBM		EBM		EBM	2D5	3
2	EBM	3D3	EBM	2D5	EBM		EBM		EBM	3C3	2
1	EBM	2B5	EBM	3B5	EBM		EBM	4B2	EBM		1
COIL		2D4		2C3		3C3		2B6		3B3	COIL

APP. FIG. 2

CAPACITOR

DESIG	LOC	CODE
C1	1C3	336946
C2	2C4	336947
C3	3C4	336948

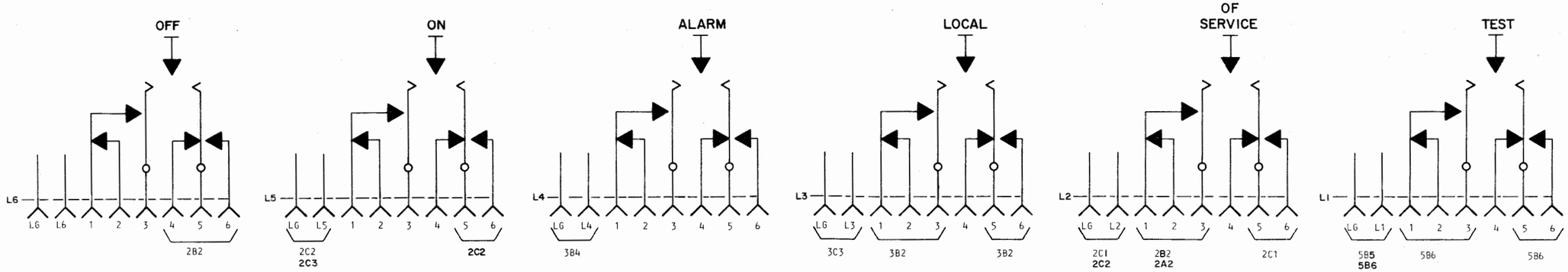
APP. FIG. 3

CORD — OPTION

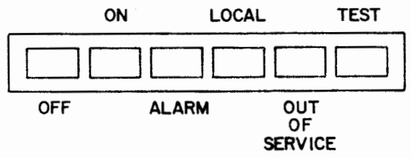
OPTION	LOC	CODE
B	1C5	156880
C	3B6	156880
F	4B5	156880

APP. FIG. 4

KEY
186683



KEYTOP
186683



LAMPS

DESIG	LOC	CODE	DESIG.	LOC	CODE
OFF	—	—	LOCAL	3C3	327061
ON	2C2	327061	OUT OF SERVICE	2C2	327061
ALARM	3B4	327061	TEST	5B5	327061

186627
SET LOGIC
ASSEMBLY

TELETYPE

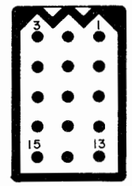
1051 SD — C1

APP. FIG. 5

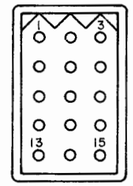
CONNECTOR

DESIG.	J1	P1	P2	J3	P3	J4	J5
CODE	RECPT.	PLUG	PLUG	PLUG	RECPT.	RECPT.	PLUG
	328733	182540	145914	325161 325163	315946	328733	328727
TERM.	LOCATION						
1	3D2	3D2	5C2	3B5	3B5	1C6	2B6
2	1B2	1B2	1B2	5B3	5B3	4C3	2C6
3	2C3	2C3	1D2	3C5	3C5	4B3	5D3
4	5B2	5B2		3B5	3B5	4C3	
5			5C2	5D3	5D3	5B3	4C5
6	2C3	2C3	2D2	3D5	3D5	4B5	5B3
7	5C2	5C2	5B2	5B3	5B3	1B6	5C3
8	2B3	2B3		5C3	5C3	1C6	3B6
9	2B3	2B3		1B5	1B5	4C3	1B6
10				1B5	1B5	4C5	
11	3B3	3B3		2C6	2C6	5D5	1B6
12	5B2	5B2		2B6	2B6	4B5	5B3
13	1D2	1D2		1C5	1C5		1D6
14	3B5	3B5		1C5	1C5	1C6	
15	2D2	2D2		1D5	1D5	4D3	3B6
16				3B6	3B6		
17				4B2	4B2		
18				4B2	4B2		
19							
20			3D2				
21							
22			5D2				
23							
24							
25							

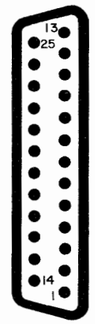
328727
PLUG



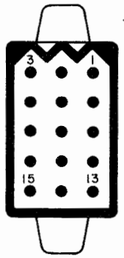
328733
RECEPTACLE



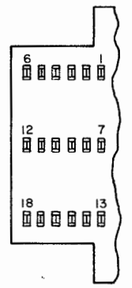
145914
PLUG



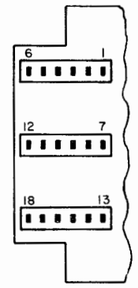
182540
PLUG



315946
RECEPTACLE



325161 & 325163
PLUG



ISSUE 1

186627 SET LOGIC ASSEMBLY	TELETYPE 1051 SD-C2

TC 640 (3-69)

ISSUE
1
2
3

APP. FIG. 6

DIODE

DESIG.	LOC	CODE
CR1	1C4	312341
CR2	1D4	177108
CR3	1D3	312341
CR4	2D3	177108
CR5	5E3	323606
CR6	5D3	323606
CR7	2D3	177108
CR8	2D4	312341
CR9	1D3	312341
CR10	1B3	312341
CR11	1B4	312341
CR12	1C3	312341
CR13	2D4	312341
CR14	2A5	197464

APP. FIG. 7

RESISTOR

DESIG.	LOC	CODE
R1	1D4	129851
R2	1D4	118153
R3	1B3	129851
R4	2D3	129851
R5	5E2	143661
R6	3D3	143661
R7	3D3	117729
R8	5D2	143661
R9	1D3	129851
R10	1B3	137439
R11	1B4	320440
R12	1C4	137444
R13	1C3	137603
R14	1C3	118725
R15	1B3	165867
R16	3D4	118169
R17	3C4	336950
P18	3D5	143667
R19	3C5	137440
R20	3D4	336950
R21	2B5	118169
R22	2C5	336950
R23	2B5	143667
R24	2C5	137440
R25	2B4	336951

APP. FIG. 8

TERMINAL

DESIG.	LOC	CODE
TB1	1C6	336952
TB2	5B5	336952
TB3	5D5	336952
TB4	5B6	336952
TB5	4B5	336952
TB6	4B2	336952
TB7	3B5	336952
TB8	4B2	336952
TB9	4C2	336952
TB10	4B5	336952
TB11		336952
TB12	4C2	336952
TB13	4B2	336952
TB14	3C5	336952
TB15	3C5	336952
TB16	1C6	336952
TB17	1B6	336952
TB18	5B3	336952
TB19	3D5	336952

APP. FIG. 9

TRANSISTOR — SCR — PUT

DESIG	LOC	CODE
Q1	1D5	319304
Q2	2D3	315930
Q3	3D4	333248
Q4	3D5	336949
Q5	2C5	327946
Q6	2B6	336949
Q7	1C3	300455

WDP

186627
SET LOGIC
ASSEMBLY

TELETYPE

1051 SD — C3

TC 640 (3-69)

CIRCUIT NOTES:

101.

DESIG.	FUSE AMP	POTENTIAL	ONE PER

BATTERY SYMBOL	VOLTAGE RANGE
+24 VDC	20-32
-20 VDC	18-30
+20 VDC (CLAMPED)	18-20
-20 VDC (CLAMPED)	12-20

102.

FEATURE OR OPTION	LOC	PROVIDE
A	1C5	HALF DUPLEX OPERATION. STRAP TB-16 TO TB-17
B	1C5	FULL DUPLEX OPERATION. STRAP TB-1 TO TB-16
C	3B6	ORIGINATION OF A CALL IN A LOW PAPER OR PAPER OUT CONDITION. STRAP TB-7 TO TB-18
D	3C6	DATA TERMINAL READY (CD) ON FOR DATAPHONE OPERATION. STRAP TB-14 TO TB-19
E	3D6	DISABLES THE DATA TERMINAL READY TIMING CIRCUIT. STRAP TB-15 TO TB-19
F	4B5	DISTRIBUTOR CONTROL. STRAP TB-5 TO TB-10
G	2A5	DISCONNECT ON PAPER ALARM

103. NETWORK VALUES

NET NO.	RESISTANCE (OHMS)	CAPACITANCE (MFD)

EQUIPMENT NOTES:

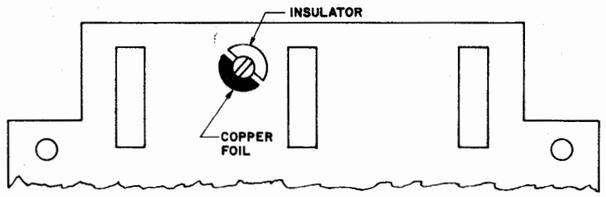
201. TERMINAL BOARD **"TB"** IS STRAPPED BY THE FACTORY AS SHOWN IN NOTE 202.

202.

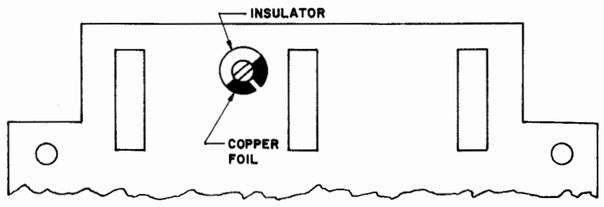
OPTION	STRAPPING TERMINALS	
	FROM	TO
B	TB-1	TB-16
C	TB-7	TB-18
F	TB-5	TB-10

203. OPTION G IS IMPLEMENTED BY POSITIONING AN INSULATOR UNDER A SCREW ON THE 303826 CIRCUIT CARD ASSEMBLY. THE HALF CIRCLE INSULATOR IS POSITIONED IN EITHER ONE OF TWO WAYS AS SHOWN BELOW. CARDS ARE FACTORY ASSEMBLED WITH OPTION G DISABLED.

OPTION G DISABLED

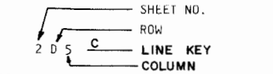


OPTION G ENABLED



INFORMATION NOTES:

301. SHEET COORDINATE LOCATION LEGEND:



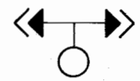
302. TERMINAL DESIGNATIONS ENCLOSED IN PARENTHESES ARE FOR REFERENCE AND ARE NOT MARKED ON COMPONENTS.

303. ALL RESISTANCE VALUES IN OHMS UNLESS OTHERWISE SPECIFIED.

304. ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.

305. ALL CAPACITANCE VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.

306. OPTION SYMBOL.



ISSUE
1
2

WOP

186627
SET LOGIC
ASSEMBLY

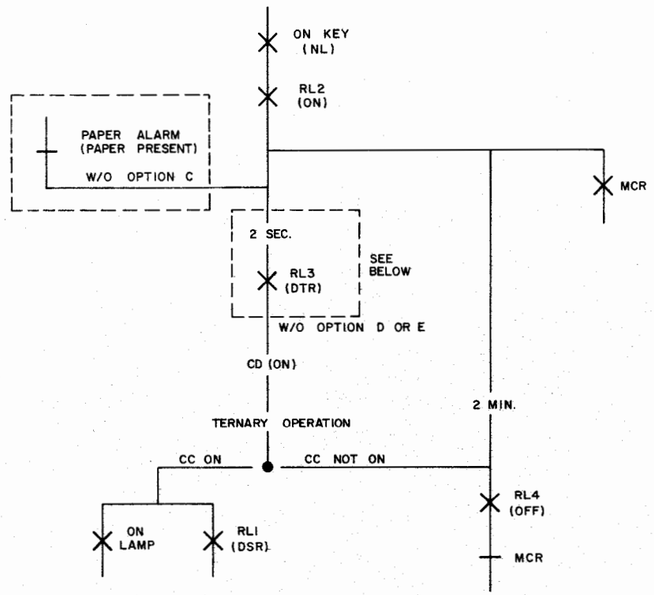
TELETYPE

1051 SD-D1

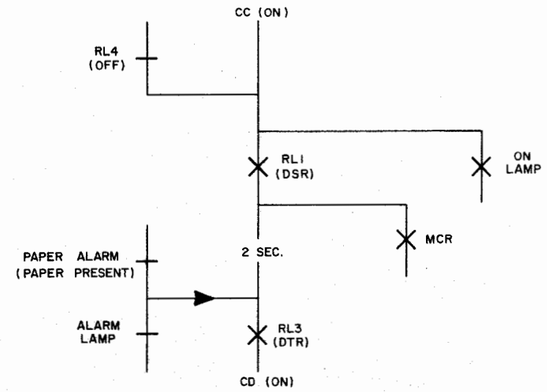
TC 640 (3-69)

ISSUE
1
2

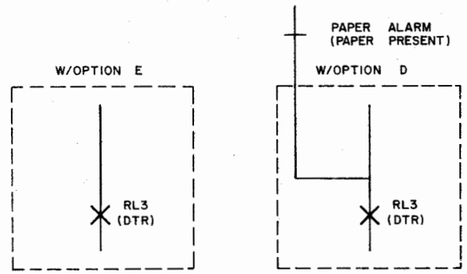
SC1
ORIGINATING STATION

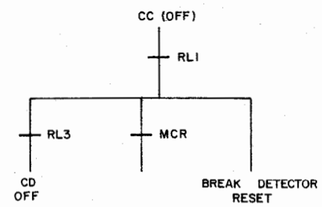


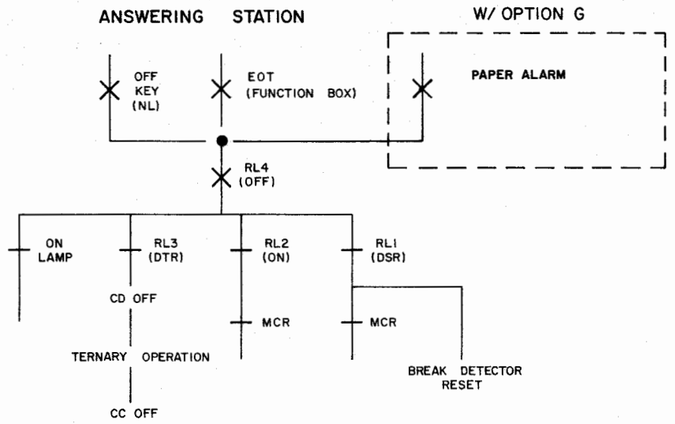
SC2
ANSWERING STATION



SC3
TERMINATE







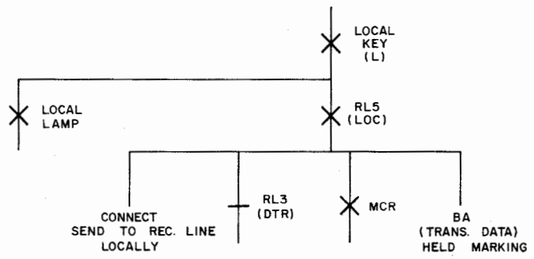
WDP

186627 SET LOGIC ASSEMBLY	TELETYPE 1051SD-E1

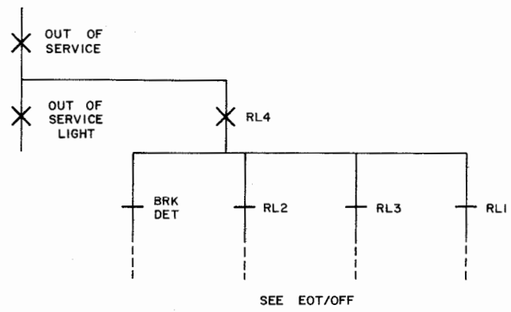
TC 640 (3-69)

ISSUE 1

SC4
LOCAL

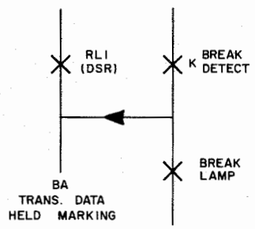


SC5
OUT OF SERVICE

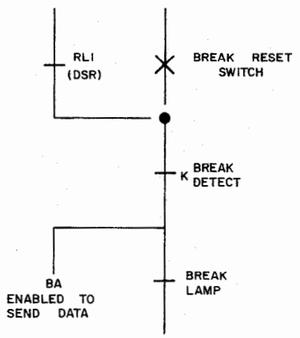


SC6
BREAK DETECTION

OPERATING



RESETTING



186627 SET LOGIC ASSEMBLY	TELETYPE
	1051 SD—E2

TG 640 (3-69)

UNTOLERANCED DIMENSIONS PER MR2003

SET LOGIC ASSEMBLY

186627

ORIGINAL USE
M33/35 FINAL
DIRECT

PARTS REQUIRED		
PART NO.	DESCRIPTION	QTY.
336954	SCREW	19
6347	SCREW	4
151685	SCREW	4
198670	SCREW	4
186637	CARD ASSEM.	1
186681	BRACKET	1
186682	BRACKET	1
186683	KEY ASSEM	1
303826	CARD ASSEM	1
327061	LAMP	5
330906	LABEL	1
330923	LABEL	1
336333	PLATE	1
336334	COLLAR	1
336464	CABLE	1
336601	CABLE	1
336631	LABEL	1
336632	LABEL	1
336633	LABEL	1
336635	LABEL	1
156880	STRAP	3
336957	LABEL	1
121244	CLAMP	1
336959	COVER	1

NOTES:

1. KEY ASSEMBLY POSITION IDENTIFICATION.

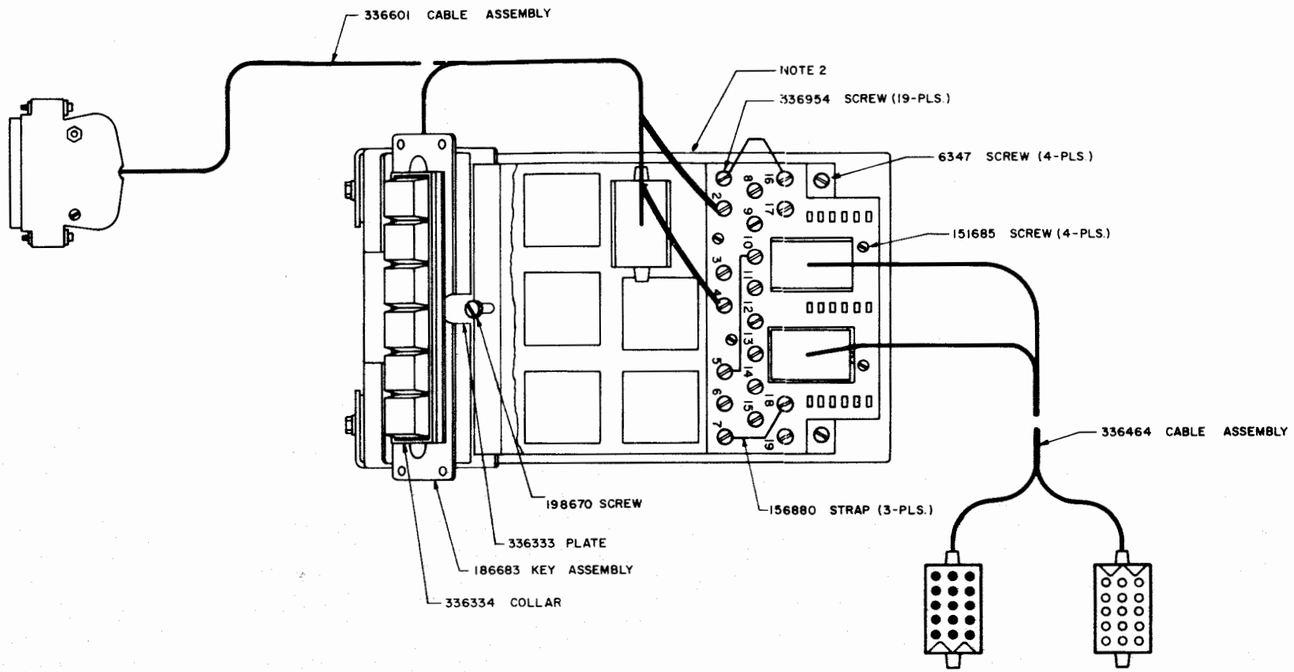
POSITION	1	2	3	4	5	6
LABEL DESIGNATION	OFF	ON	ALARM	LOCAL	OUT OF SERVICE	TEST
LABEL PART NUMBER	336631	336635	330923	336633	330906	336632
LAMP PART NUMBER	NOT REQUIRED	327061	327061	327061	327061	327061

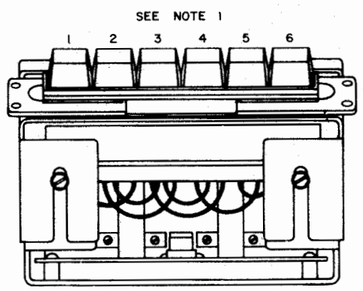
2. ATTACH PURPLE (P) WIRE OF THE 336601 CABLE ASSEMBLY TO TERMINAL NO. 2 OF THE 186637 CIRCUIT CARD ASSEMBLY.

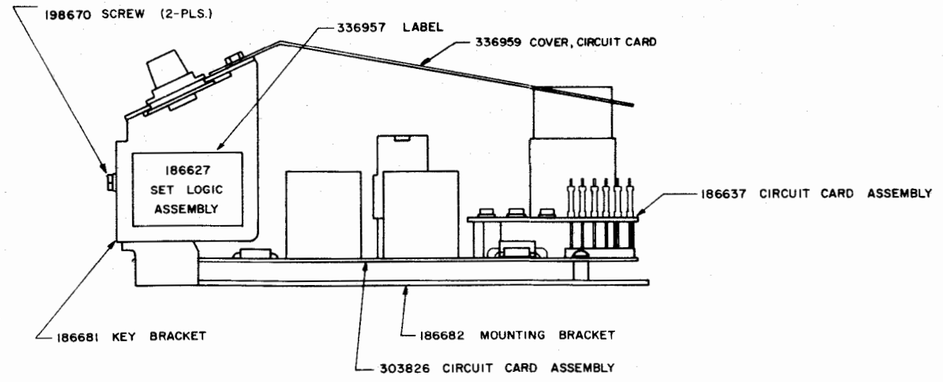
   ATTACH SLATE (S) WIRE OF THE 336601 CABLE ASSEMBLY TO TERMINAL NO. 4 OF THE 186637 CIRCUIT CARD ASSEMBLY.

3. WIRE PER AND INCLUDE ONE COPY OF WDP 0238 WITH EACH UNIT.

4. FOR SALES ORDERS ONLY FURNISH A COPY OF 50,694S.







198670 SCREW AND 121244 CABLE
CLAMP TO BE ATTACHED AND SHIPPED WITH ASSEMBLY

REFER TO 10515D FOR SCHEMATIC WIRING

ISSUE	DATE	AUTH. NO.
5	4-21-71	3794
4	8-18-70	786
3	6-23-70	635
2	5-15-70	508
1	3-3-70	20630R

REVISIONS

APPROVALS

PROJ. SUPV.	PROJ DIR.	MFG. REL. COMPL.
TJC	RRS	LWM

ENGR. A.S | DSGNR. A.S.
DRN. C.E.C. | DATE 10-15-69
S-NUMBER 61,733
PROD. NO. 186627
R&D FILE 2-165.152AA

TELETYPE CORPORATION - COMPANY PRIVATE

SCALE 1/1

FINISH	HEAT TREAT	MATERIAL SPECIFICATION

SIMILAR TO:

TELETYPE

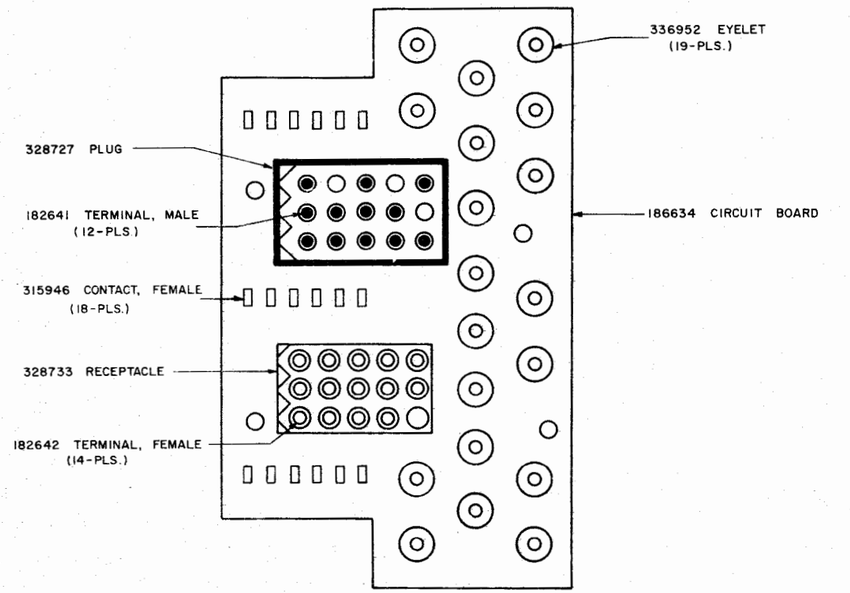
186627

TC 263 (3-69)

REF DESIG.	PART NO. REQ.	QTY	DESCRIPTION
	328727	1	PLUG, 15 CIRCUIT
	328733	1	RECEPTACLE, 15 CIRCUIT
	182641	12	TERMINAL, MALE
	182642	14	TERMINAL, FEMALE
	315946	18	CONTACT, FEMALE
	336952	19	EYELET
	186634	1	CIRCUIT BOARD

NOTE: PRINTING SCREEN TO MADE FROM MASTER ARTWORK NO. 186637 AW. ARTWORK AVAILABLE IN R&D OFFICE SERVICE SECTION

UL RECOGNITION SYMBOL REQUIRED PER MR 2001.



REFER TO 1051 SD FOR SCHEMATIC WIRING

SIMILAR TO:

REVISIONS		
ISSUE	DATE	AUTH NO.
1	1-21-70	20630-R
2	3-3-71	2320

CIRCUIT CARD

186637

CIRCUIT CARD

ASSEMBLY

APPROVALS		
PROJ. SUPV.	PROJ. DIR.	MFG. REL. COMPL.
TDC	RRS	
ENGR. A.S.	DSGNR. A.S.	
DRN. C.E.C.	DATE 10-9-69	
E-NUMBER		
SD-CD NO. 1051		
R&D FILE 2-165.152AA		

TELETYPE

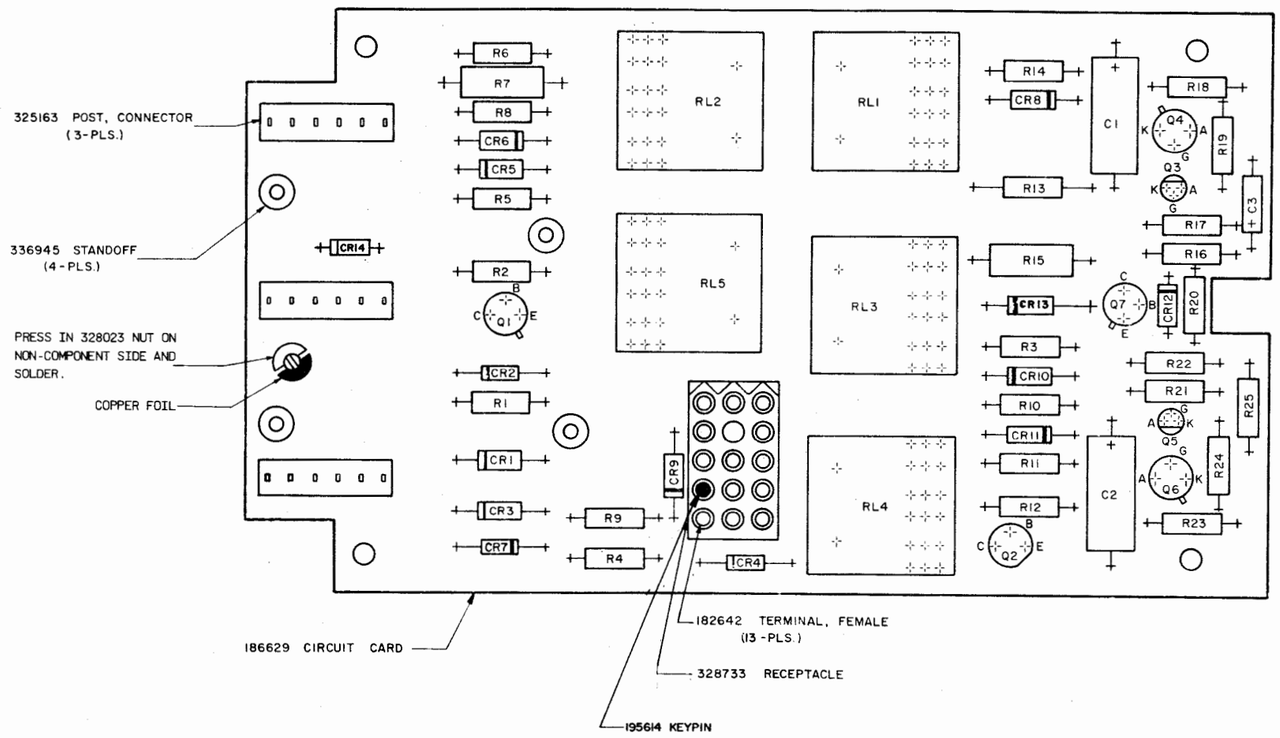
186637

TC 637 (3-69)

REF. DESIG.	PART NO. REQ.	QTY.	DESCRIPTION
C1	336946	1	CAPACITOR, 100MFD, 20V
C2	336947	1	CAPACITOR, 10 MFD, 35V
C3	336948	1	CAPACITOR, 1 MFD, 35V
CR1	312341	8	DIODE, 1N4004 NOTE 4
CR2	177108	3	DIODE, D2
CR3			SAME AS CR1
CR4			SAME AS CR2
CR5	323606	2	DIODE, 1N4747A
CR6			SAME AS CR5
CR7			SAME AS CR2
CR8			SAME AS CR1
CR9			SAME AS CR1
CR10			SAME AS CR1
CR11			SAME AS CR1
CR12			SAME AS CR1
CR13			SAME AS CR1
CR14	197464		DIODE
Q1	319304	1	TRANSISTOR
Q2	319930	1	TRANSISTOR 2N3568
Q3	333248	1	PUT D13T1
Q4	336949	2	SCR 2N2323
Q5	327946	1	PUT D13T2
Q6			SAME AS Q4
Q7	300455	1	TRANSISTOR 2N697
R1	129851	4	RESISTOR 3.3K, 1/2W
R2	118153	1	RESISTOR 33K, 1/2W
R3			SAME AS R1
R4			SAME AS R1
R5	143661	3	RESISTOR 330 Ω, 1/2W
R6			SAME AS R5
R7	117729	1	RESISTOR, 2.7K 1W
R8			SAME AS R5
R9			SAME AS R1
R10	137439	1	RESISTOR 820 Ω, 1/2W
R11	320442	1	RESISTOR 240 Ω, 1/2W
R12	118186	1	RESISTOR 5.6K, 1/2W
R13	137603	1	RESISTOR 510 Ω, 1/2W
R14	118725	1	RESISTOR 270 Ω, 1/2W
R15	165867	1	RESISTOR 3K, 1W
R16	118169	2	RESISTOR 1M, 1/2W
R17	336950	3	RESISTOR 1.6M, 1/2W
R18	143667	2	RESISTOR 3.9K, 1/2W
R19	118160	2	RESISTOR 10K, 1/2W
R20			SAME AS R17
R21			SAME AS R16
R22			SAME AS R17
R23			SAME AS R18
R24			SAME AS R19
R25	336951	1	RESISTOR 12M, 1/2W
	336945	4	STANDOFF
	325163	3	POST, CONNECTOR
	328733	1	RECEPTACLE, 15 CIRCUIT
	182642	13	TERMINAL, FEMALE
	144495	5	TRANSISTOR PAD
	195614	1	KEYPIN
	186629	1	CIRCUIT BOARD
RL1	336953	5	RELAY
RL2			SAME AS RL1
RL3			SAME AS RL1
RL4			SAME AS RL1
RL5			SAME AS RL1
	328023	1	NUT, PRESS
	336423	1	INSULATOR
	328022	1	SCREW, 2-56

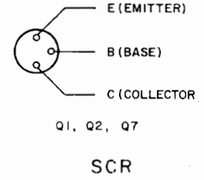
NOTE: PRINTING SCREEN TO BE MADE FROM MASTER ARTWORK NO. 303826 AW ARTWORK AVAILABLE IN R&D OFFICE SERVICE SECTION.

1. UL RECOGNITION SYMBOL REQUIRED PER MR 2001.
2. ON ISSUE 6, R19 AND R24 WERE IK OHMS.
3. AT ASSEMBLY ISSUE 8, DIODE CR14 AND SCREW OPTION HARDWARE WERE ADDED. REFER TO 1151SD-CD FOR EXPLANATION.
4. STANDARD DIODE REPLACED 181653.



BOTTOM VIEWS

TRANSISTOR

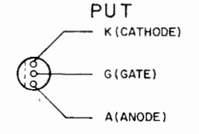


Q1, Q2, Q7

SCR

Q4, Q6

PUT



Q3,Q5

REFER TO 1051 SD FOR SCHEMATIC WIRING

REVISIONS		
ISSUE	DATE	AUTH NO.
1	1-21-70	20630-R
2	5-18-70	508
3	9-21-70	912
4	11-2-70	912-1
5	1-26-71	3768
6	3-3-71	2320
7	4-26-71	2804
8	2-1-73	6993

WDP

CIRCUIT CARD
E.C 826
303826
CIRCUIT CARD
ASSEMBLY

APPROVALS		
PROJ. SUPV. TDC	PROJ. DIR. RRS	MFG. REL. COMPL.
ENGR. A.S.	DSGNR. A.S.	
DRN. C.E.C.	DATE 10-7-69	
E-NUMBER		
SD-CD NO. 1051		
R&D FILE 2-165.152AA		

TELETYPE

303826

SIMILAR TO

TC 637 (3-69)

186627
SET LOGIC
ASSEMBLY

SECTION I - GENERAL TECHNICAL DATA

1. Purpose of Circuit

1.01 The 186627 Set Logic Assembly is a basic module designed to provide facilities for the interconnection of Teletype terminal equipment and data sets which conform to the standards of the Electronics Industries Association. In accordance with these standards, all data and control leads of the data set carry polar voltage signals.

1.02 The 186627 Set Logic Assembly accepts current-no-current data and control signals from the teletypewriter and converts them into suitable polar signals for use by the data set. In addition, it accepts polar data and control signals from the data set and converts them into current-no-current signals for use by the teletypewriter.

2. General Description of Operation

2.01 The 186627 Set Logic Assembly, consisting of a main circuit card, a customer interface and connector circuit card, and a pushbutton assembly, is mounted in the front right hand corner of an M33 or M35 terminal.

2.02 The pushbutton assembly consists of six pushbuttons, these are: OFF (non-locking, releasing), ON (non-locking, releasing), ALARM (non-locking, non-releasing), LOCAL (locking, releasing), OUT OF SERVICE (locking, releasing), and TEST (locking, releasing).

2.03 The electronic circuitry required to perform the various set functions is mounted on the main circuit card. The customer interface and connector card is fastened to the main circuit card and is accessible at the rear of the set logic assembly for customer programming.

2.04 The 186627 Set Logic Assembly obtains its operating power from the call control unit in the teletype terminal.

2.05 Data Set Interface Leads

2.05 1 AA - Protective Ground - This conductor shall be electrically bonded to the frame of the terminal apparatus. It may be further connected to external grounds as required by applicable regulations.

2.05 2 AB - Signal Ground - This conductor establishes the common-ground reference potential for all interchange circuits except Circuit AA (Protective Ground). It may be connected to Circuit AA or the frame, as required by applicable regulations, and is available at TB - 18.

2.05 3 BA - Transmitted Data - Signals on this circuit are generated by the terminal apparatus for transmission to remote data sets.

SECTION I (CONTINUED)

2.05 4 BB - Received Data - Signals on this circuit are generated by the data set in response to data signal received from remote data sets.

2.05 5 CB - Clear to Send - Signals on this circuit are generated by the data set to indicate that the data set is ready to transmit data when in the ON condition.

2.05 6 CC - Data Set Ready - Signals on this circuit are generated by the data set to indicate that it is ready to operate (ON condition). The OFF condition indicates either:

a. Any abnormal or test condition which disables or impairs normal operation.

b. That the communication channel is switched to an alternate means of communication.

c. That the data set is not connected to the communication channel.

2.05 7 CD - Data Terminal Ready - Signals on this circuit are generated by the terminal apparatus to control switching of the data set to a communications channel. The ON condition causes the data set to be connected to a communications channel. The OFF condition removes the data set from a communications channel for such reasons as terminating a call, freeing the line for alternate use, or permitting the use of the terminal apparatus for an alternate function.

2.05 8 CE - Ring Indicator - Signals on this circuit are generated by the data set to indicate that ringing current is being received from a remote station. The ON condition indicates that a ringing signal is being received with the OFF condition maintained at all other times.

2.06 Modes of Operation

2.06 1 The control circuits provide for the following modes of operation.

a. Call Origination

b. Unattended Answering

c. Local

d. Out of Service

e. Alarm

f. Test

g. Terminating a Call

SECTION I (CONTINUED)

2.07 Call Origination

2.07 1 The attendant must depress the ON pushbutton of the set logic assembly. (Refer to the appropriate data set circuit description for the correct dialing procedure, if applicable).

2.07 2 When the ON pushbutton is depressed, the Data Terminal Ready and the Disconnect Timers are activated, if the terminal is equipped with break detection circuitry, this circuitry is enabled at this time.

2.07 3 Approximately 2 seconds after the Data Terminal Ready Timer is activated, the set logic assembly transmits a Data Terminal Ready (CD) signal to the Data Set.

2.07 4 A connection must be made and the data set must have sent a Data Set Ready (CC) signal to the terminal within 2 minutes or the terminals disconnect circuitry will terminate the call.

2.08 Unattended Answering

2.08 1 If the remote terminal data set is equipped to answer a call automatically, that terminal can answer a call automatically and without an attendant being present.

2.09 Local

2.09 1 To enter the LOCAL mode, the attendant must depress the LOCAL pushbutton of the set logic assembly. This will energize the LOCAL relay which in turn puts a marking signal on the Transmit Data (BA) lead and the Data Terminal Ready (CD) lead is held in the off condition.

2.10 Out of Service

2.10 1 An OUT OF SERVICE pushbutton has been provided on the set logic assembly. When this key is depressed, such as for maintenance, a call cannot be answered automatically.

2.11 Alarm

2.11 1 An ALARM indication lamp has been provided that indicates a low paper condition.

2.12 Test

2.12 1 A TEST pushbutton has been provided on the set logic assembly, this pushbutton will activate external circuitry.

2.13 Terminating a Call

2.13 1 A call can be terminated in one of two ways, both of these procedures are recognized by the set logic assembly identically.

SECTION I (CONTINUED)

a. Transmission of an EOT code from a teletypewriter terminal.

b. Depressing the OFF pushbutton.

3. Support Information

3.01 The following documents are offered as support information for the 186627 Set Logic Assembly:

WDP0238 Wiring Diagram Package for the 186627 Set Logic Assembly.

8163WD Model 33 Automatic Send-Receive Keyboard Send-Receive and Receive only sets using the UOC29.

SECTION II - DETAILED DESCRIPTION

1. Originating a Call (FS-2)

1.01 The operator must depress the non-locking ON pushbutton. The RL2 relay energizes through the ON pushbutton. The RL2 relay is held energized through RL4-5B, RL1-4B, RL2-4M and the normally closed OFF pushbutton. When the RL2 relay energized, the RL2-2M contact closed, thus energizing the motor control relay, starting the motor and the Disconnect Timing Circuit.

1.02 When the RL2 relay energized, RL2-3M closed which started the Data Terminal Ready Timing Circuit. After 2 seconds the Data Terminal Ready Timing Circuit activated, energizing the RL3 relay through RL4-6B, RL5-2B, RL2-3M, and either the normally closed paper alarm contact or RL2-1M contact. The RL2-1M contact is an option that is provided by strapping TB-7 to TB-18, this will allow a station to originate a call in a low paper or paper out condition. The CC lead (P2-6) must go positive within 2 minutes after the ON key is depressed. The RL3 relay is now held energized through RL3-5M and RL1-2M. Normally, J1-1 is at -10 volts which indicates Data Terminal is not ready. When RL3 energizes RL3-6B opens, putting a +20v DC on J1-1 which indicates Data Terminal Ready.

1.03 When the CC lead goes positive the Q2 transistor turns on which energizes the RL1 Relay through RL4-4B, and the ON pushbutton is illuminated. Two minutes after depressing the ON pushbutton the Disconnect Timing Circuit activates and attempts to energize the RL4 Relay through RL1-1B, since the CC lead is on, the RL1 Relay would be energized opening the RL1-1B, thus preventing the RL4 Relay from being energized. If the CC lead did not turn on within 2 minutes, the RL1 Relay would not energize, thus the RL1-1B contact would be closed and the RL4 Relay would be energized which would terminate the call and turn off the motor.

1.04 If the CC lead did come up then the motor is running and the terminal is ready to transmit or receive data. At the conclusion of transmission, the call can be terminated by receiving an EOT character which causes operation of the RL4 Relay or by the operator pushing the OFF pushbutton which also operates the RL4 Relay. This causes the RL3 Relay to drop out by opening the RL4-6B contact which turns off the CD lead and transferring the RL4-4 contact which causes RL1 to drop

6.07.1 (Continued)

note 203 in the SD), the Data Terminal Ready (CD) lead will go negative when the paper alarm is operated, indicating to the data set that the terminal is unable to accept data.

6.07.2 On 303826 circuit card assembly issues earlier than eight, Option G can be installed by adding a 197464 (low power silicon) diode to the 303826 circuit card assembly. Carefully solder diode CR14 to the 325163 connector posts (plug J3) with anode to post 12 and cathode to post 16.

7. Controls

7.01 OFF

7.01 1 The OFF pushbutton does not contain an indicator lamp.

SECTION II (CONTINUED)

7.01 2 Depressing the OFF pushbutton operates the RL4 Relay, thus placing the terminal in the off condition. The OFF pushbutton overrides any remote start-up command and the terminal will be off as long as the pushbutton is depressed.

7.01 3 Operating the OFF pushbutton will release any locking pushbutton that had been depressed. (LOCAL, OUT OF SERVICE OR TEST).

7.02 On

7.02 1 The ON pushbutton contains an indicator lamp. The lamp is on whenever the terminal receives a Data Set Ready (CC) from the data set.

7.02 2 Depressing the ON pushbutton operates the RL2 Relay, the procedure that would follow is fully described in paragraph 1 of this section.

7.02 3 Operating the ON pushbutton will release any locking pushbutton that had been depressed.

7.03 Local

7.03 1 The LOCAL pushbutton contains an indicator lamp. The lamp is on whenever the terminal is in the Local mode.

7.03 2 Depressing the LOCAL pushbutton operates the RL5 Relay, the procedure that would follow is fully described in paragraph 5 of this section.

7.03 3 Operating the LOCAL pushbutton will release any other locking pushbutton that had been depressed.

7.04 Out of Service

7.04 1 The OUT OF SERVICE pushbutton contains an indicator lamp. The lamp is on whenever the terminal is placed in the Out of Service mode.

7.04 2 Depressing the OUT OF SERVICE pushbutton holds the RL4 Relay operated, thus placing the terminal in the Off mode.

7.04 3 Operating the OUT OF SERVICE pushbutton will release any other locking pushbutton that had been depressed.

7.05 Test

7.05 1 The TEST pushbutton contains an indicator lamp. The lamp is on whenever the TEST pushbutton is depressed.

7.05 2 Depressing the TEST pushbutton closes the L1-1/3 contact of the pushbutton assembly. This contact is presented at TB-2 and TB-4 and is intended to activate external test circuitry.

7.05 3 Operating the TEST pushbutton will not prevent the terminal from receiving a call as described in paragraph 2 of this section.

SECTION II (CONTINUED)

7.05 4 Operating the TEST pushbutton will release any other locking pushbutton that has been depressed.

8. Indicators

8.01 Alarm

8.01 1 The ALARM lamp is turned on when the terminal goes into a low paper (or paper out with sprocket feed) condition. If a message is being transmitted when a low paper condition is sensed, the operation of the terminal will remain uneffected. After the terminal is turned off, a call may be originated only if Option C (see paragraph 6.03 of this section) has been implemented, but a call cannot be received.

9. Power (FS-6)

9.01 +24 VDC and -20 VDC are supplied to the logic assembly from the call control unit (UCC29) contained in the teletypewriter.

9.02 The +24 VDC and -20 VDC together with zener diodes CR5 and CR6 and resistors R5 and R8 are used to supply -20 VDC clamped and +20 VDC clamped for EIA output leads.

10. Timing Circuit Operation (FS-2 & 3)

10.01 Component cross reference:

Designation	Disconnect Timer (2 min.)	Data Terminal Ready Timer (2 sec.)
Ra	R21	R17
Rb	R22	R16
Rc	R25	R20
C	C2	C3
Qa	Q5	Q3
Qb	Q6	Q4

10.02 When Relay RL1 or RL2 are operated, +24 VDC is applied across the RC Timing components Rc and C when the voltage at the junction of Rc and C is approximately 12.5 VDC, Qa is turned on. The turn on time is determined by time constant multiplier which is provided by the gate voltage divider Ra and R6. When Qa turns on it pulses the gate of Qb thus turning Qb on.

SECTION III - REFERENCE DATA

1. Working Limits

1.01 Ambient Temperature Range - 40°F to 110°F.

1.02 Relative Hunidity Range - 0 to 95 percent.

SECTION III - (CONTINUED)

2. Abbreviations and Functional Designations

2.01 Abbreviations Used:

AA	Protective Ground
AB	Signal Ground
BA	Transmitted Data
BB	Received Data
CB	Clear to Send
CC	Data Set Ready
CD	Data Terminal Ready
CE	Ring Indicator

2.02 Functional Designations

Designation	Meaning
C	Capacitor
CR	Diode
J1	Receptacle, Pushbutton Assembly
J3	Receptacle, "Piggyback" Card
J4	Receptacle, Call Control Unit
J5	Plug, Call Control Unit
L	Plug, Pushbutton Assembly
P1	Plug, Pushbutton Assembly cable
P2	Plug, EIA, Data Set
P3	Plug, "Piggyback" Card
Q	Transistor, SCR or PUT
R	Resistor
RL1	Relay, Data Set Ready
RL2	Relay, On
RL3	Relay, Data Terminal Ready
RL4	Relay, Off
RL5	Relay, Local
TB	Terminal Board

3. Connecting Circuits

3.01 Data sets or stations conforming to EIA RS-232-B Standard.

3.02 Teletype machines equipped with a UCC29.