

## CONVENTIONAL DISTRIBUTING FRAMES

### TERMINAL STRIPS

#### DESCRIPTION

#### 1. GENERAL

1.01 This section describes the terminal strips mounted on the conventional distributing frames.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 Terminal strips are used for the termination of equipment cabling and cross-connections to outside plant and intraoffice equipment on various distributing frames.

#### 2. DESCRIPTION

2.01 Terminal strips have two basic compositions—cast resin and laminated phenolic. The 286-and 336-type terminal strips are cast resin molded blocks with terminals arranged for wire-wrap connections on both the cabling and cross-connect sides. Figure 1 shows a typical 336-type cast resin terminal strip.

2.02 Most terminal strips other than the 286-and 336-type are constructed with laminated phenolic. The terminals are insulated with phenolic molded strips or phenolic fiber strips. Figure 2 shows a typical laminated phenolic terminal strip.

2.03 The terminals and insulations of the laminated phenolic terminal strip are held together with a clamping strip, fastened to a molded base. The cast resin blocks have the terminals molded into the block.

2.04 There are three basic types of terminals used in the terminal strips as follows:

(a) A single terminal arranged for solder connections on both the cabling and cross-connect sides

(b) A single tang terminal arranged for wire-wrap connections on the cabling side and soldered connections on the cross-connect side

(c) Single and bifurcated wire-wrap terminals on both the cabling and cross-connect side.

**Note:** All the single and most bifurcated wire-wrap terminals are angled forward 45° to aid in the wire-wrapping procedure.

2.05 Table A lists the specifications of the terminal strips. This information may be used for either terminal strip identification or selection.

#### 3. INTERCEPT CONNECTOR CROSS-CONNECTIONS

3.01 The KS-20590, L1 through L7 connectors (Fig. 3) are used in lieu of wire straps to connect subscriber lines to their associated intercept trunks on HIDEF and CDF terminal strips. The KS-20590 connector replaces the KS-19922 connector which is manufacture discontinued.

3.02 The KS-20590 connectors consist of a rectangular printed wiring board equipped with either six or seven spring contacts. The six spring contact units have springs arranged with three rows of two spring contacts each that provide two sets of tip, ring, and sleeve connections. The seven spring contact units have springs arranged with two rows of two spring contacts each and a third row with three spring contacts that provide two sets of tip, ring, and sleeve connections and one message register connection. The leading edge of each KS-20590 connector is color coded for ease of identification by list number. The list numbers and color codes of the connectors are as follows:

L1 (YELLOW)—Six spring contacts connect tip, ring, and sleeve to tip, ring, and sleeve,

#### NOTICE

Not for use or disclosure outside the  
Bell System except under written agreement

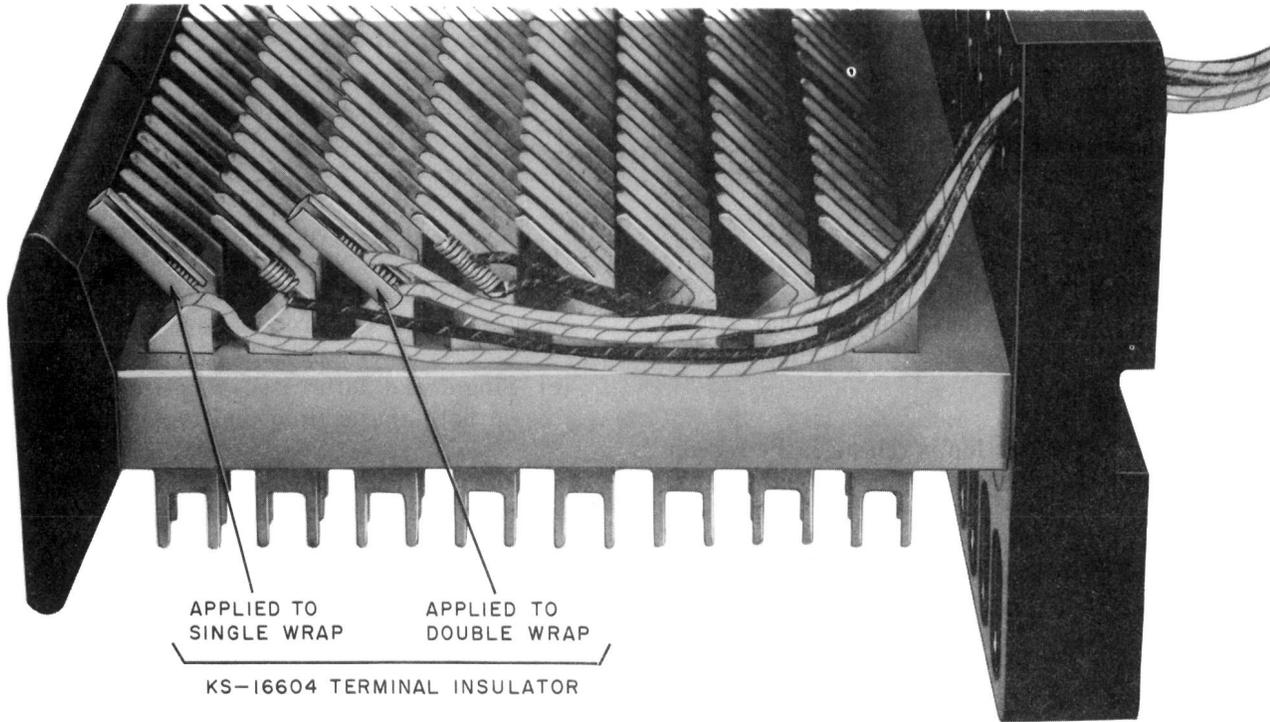


Fig. 1—336-Type Terminal Strip-Protection of Special Lines

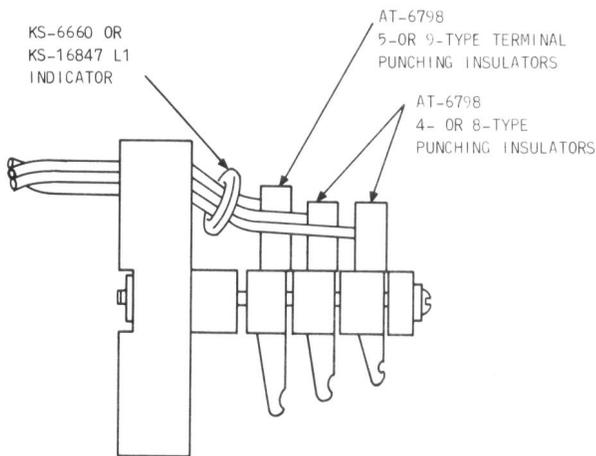


Fig. 2—Indicator and Terminal Punching Insulators on Laminated Phenolic Terminal Strip

respectively. It is used in panel and step-by-step offices with operator intercept.

L2 (RED)—Six spring contacts provide a tip and ring reversal with straight sleeve-to-sleeve

connections. It is used in panel and step-by-step offices with recorded announcement intercept.

L3 (GREEN)—Six spring contacts connect tip, ring, and sleeve to tip, ring, and sleeve, respectively, except the sleeve spring contacts are connected by a 446T diode. The diode is arranged to permit current flow only from the sleeve contact at the square end of the connector to the sleeve contact at the beveled end of the connector. It is used in panel offices associated with an Automatic Intercept System only.

L4 (NATURAL—No color)—Same as the L3 except the diode between the sleeve contacts is reversed. It is used in step-by-step offices associated with an Automatic Intercept System only.

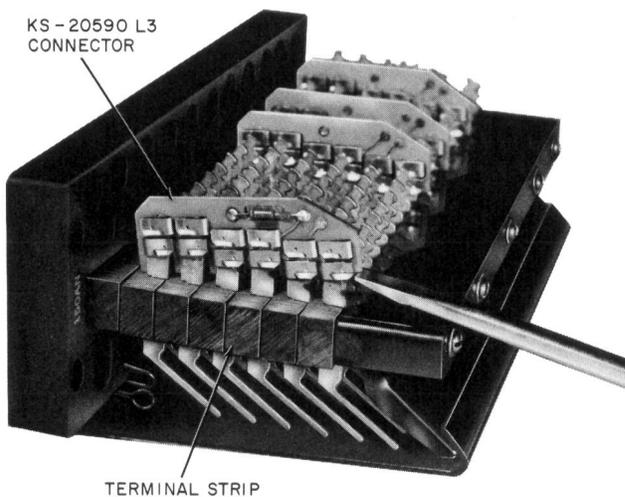
L5 (WHITE)—Has seven spring contacts and is equipped with a 446T diode polarized in the same direction as the L4. It is used in step-by-step offices associated with Automatic Intercept Systems equipped with

seven point blocks and connections to the number network frames are made from the M lead and strapped on the cross-connection side of the distribution frame blocks.

L6 (BLACK)—Is similar to the L4 except a different diode is used. It is used in No. 1 step-by-step automatic message accounting offices that are associated with the Automatic Intercept System.

L7 (ORANGE)—Is similar to the L5 except a different diode is used. It is used in No. 1 step-by-step automatic message accounting offices associated with Automatic Intercept Systems equipped with seven point blocks, and connections to 1000 number frames are made from the M lead and strapped on the cross-connection side of the distribution frame blocks.

**3.03** The terminals on the terminal strip must be cleaned prior to using the above connectors. A notch is provided in the front edge of the connector (Fig. 3) to facilitate removal. Using a flat-blade screwdriver, slightly pry the connector and remove it from the terminals by pulling directly upward.

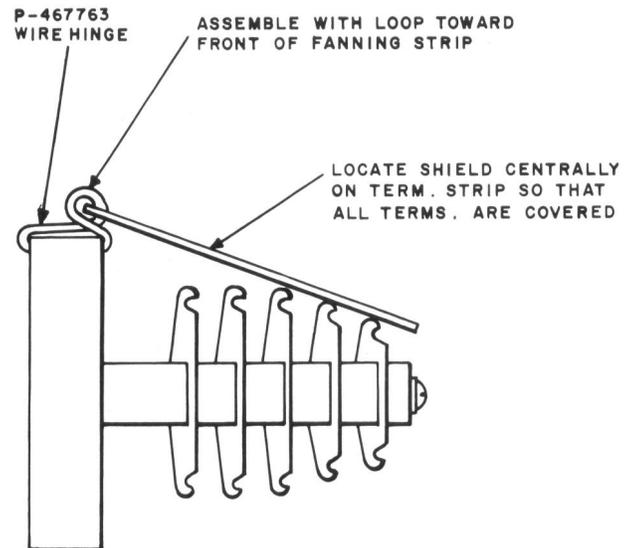


**Fig. 3—Removal of KS20590 Connector From Terminal Strip**

#### 4. TERMINAL STRIP GUARDS AND SHIELDS

##### 37-Type Shield

**4.01** The 37-type terminal shields (Fig. 4) may be used in cases where a number of special circuits appear on adjacent rows of terminals on one or more horizontally mounted terminal strips. These shields do not relieve the requirement for individual terminal protection provided by 4- or 8- and 5- or 9-type insulators. The 37-type terminal shields may also be used on horizontally mounted terminal strips where experience has indicated that a high incidence of trouble has resulted from solder and wire clippings. The shield code numbers include the associated hinges. Additional wire hinges per P-467763 may be obtained when required. The 37-type shields (Fig. 4) may be installed by springing the wire hinges sufficiently to grip the base of the terminal strip at the proper holes. The shields designed for the particular terminal strips are listed in Table B.



**Fig. 4—37 Type Shield on Terminal Strip**

##### Terminal Strip Guards

**4.02** The KS-20132 type guard (Fig. 5) is a clear plastic protective device for use on the bottom (cable side) of terminal strips on distributing frames of miscellaneous switching systems. The

guard covers the edge of the molded clamping strip and is held in position with cable ties. A similar guard, KS-20108, is used on the 336-type terminal strip and is shown in Fig. 6 through 9. The KS-20108 guard has two curved tabs which mount into slots on the terminal strip barrier guard and is also held in position with cables ties. Both type guards protect the solderless wire-wrap terminals on the cable side from damage while running or removing cross-connections. They also eliminate the possibility of injury to personnel during heavy maintenance activities. Each guard is furnished with two plastic cable ties which are used to secure the guard to the base of the terminal strip. Additional cable ties may be obtained as either Panduit Corp. Part No. PAN-TY® PLT 1M or Thomas E. Betts Co. Part No. TY-RAP® TY-23M. Refer to Table C or Table D for application of the KS-20108 or KS-20132 type guard, respectively.

**4.03** The KS-20107 type guard (Fig. 6 through 9) is a clear plastic protective device for use on the top (cross-connect side) of the 336-type terminal strips. The guard is furnished with two

KS-20309 L1 wire hinges which are fastened to the terminal strip barrier guard with screws provided. Additional wire hinges per KS-20309-L1 may be obtained when required. The guard protects the solderless wire-wrap terminals on the cross-connect side of the terminal strip on distributing frames of miscellaneous switching systems. Individual terminal protection can be provided by the KS-16604, L1 or L2 terminal punching insulator. Table C lists the applications of the KS-20107 type guard.

## 5. INSULATORS AND INDICATORS

**5.01** On distributing frames, insulators and indicators are used to prevent service interruptions, equipment damage, and personal injury.

**5.02** Special service lines should be designated on the vertical and horizontal sides of the frame between the fanning strip and terminals by means of the KS-6660 or KS-16847, L1 indicators (Fig. 2). Solder terminal punchings should be protected with the AT-6798 type 4 or 5 insulators

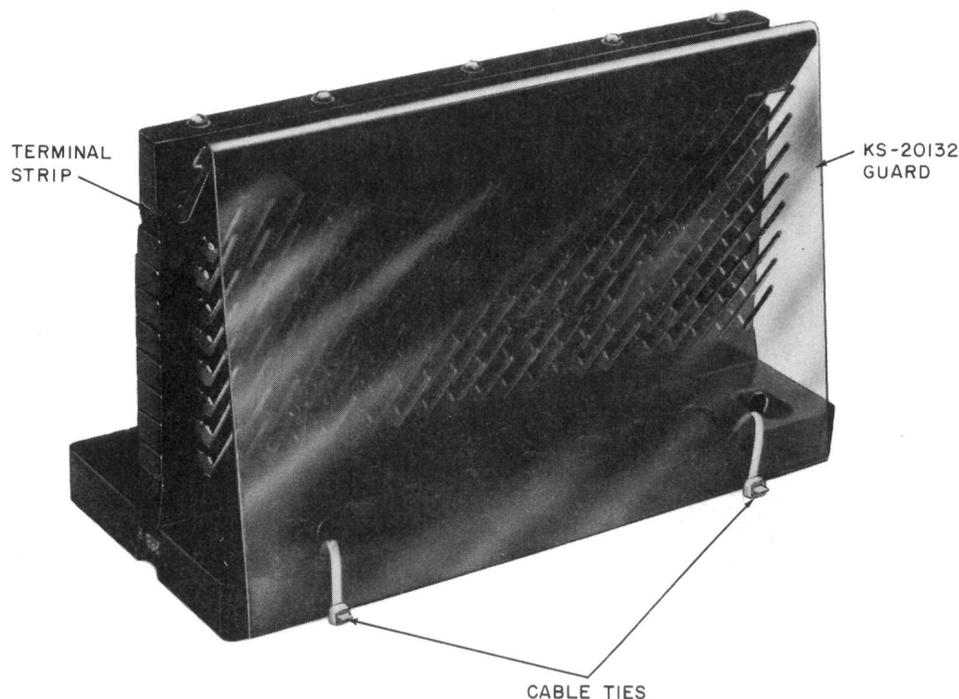


Fig. 5—KS-20132 L1 Through L22 Guards

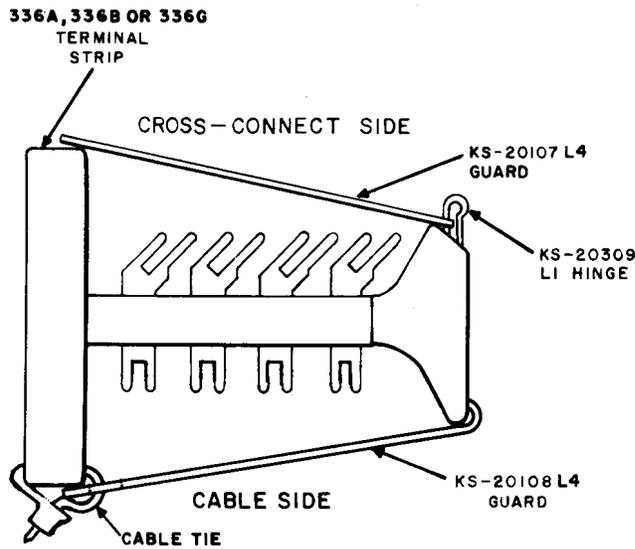
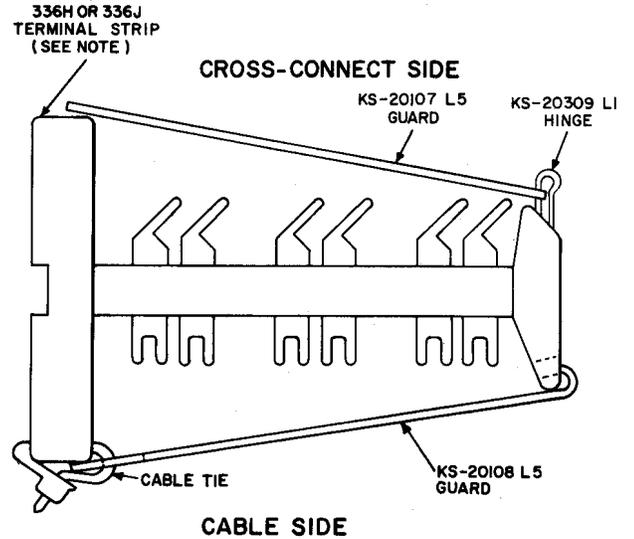
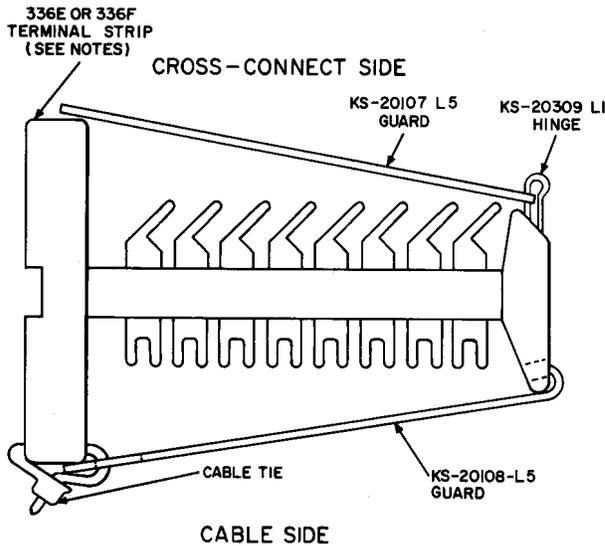


Fig. 6—336A, or 336B, or 336G Terminal Strips



NOTE:  
THE 336H AND 336J PROVIDES SPACE FOR AN ADDITIONAL WIRE WRAP ON CROSS-CONNECT (SINGLE TINE) END OF TERMINAL

Fig. 8—336H or 336J Terminal Strips



NOTES:  
1. THE 336E AND 336F PROVIDES SPACE FOR AN ADDITIONAL WIRE WRAP ON CROSS-CONNECT (SINGLE TINE) END OF TERMINAL.  
2. 336C AND 336D ARE MANUFACTURE DISCONTINUED.

Fig. 7—336E or 336F Terminal Strips

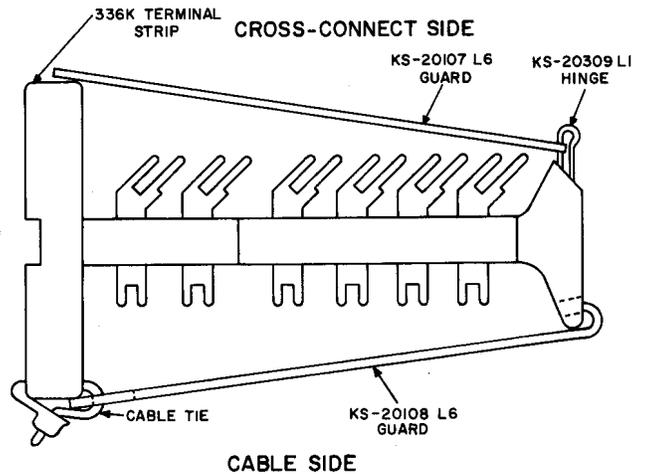


Fig. 9—336K Terminal Strip

**SECTION 201-220-105**

(Fig. 2). When there is a wire build-up, protection is obtained with the AT-6798 type 8 or 9 terminal punching insulators (Fig. 2).

**5.03** Wire wrapped terminals of special service lines should be protected by KS-16604

insulators (Fig. 1). The KS-16604, L1, L2, or L3 insulators are available in 1/2-inch, 5/8-inch, and 7/8-inch lengths, respectively.

TABLE A

CODE	NO. OF ROWS	TERMINALS		LENGTH (INCHES)	WIDTH (INCHES)	DEPTH (INCHES)	MTG CTR (INCHES)	TYPE OF TERM.		STRAPPED
		PER ROW	TOTAL NO.					CABLE SIDE	X-CONN SIDE	
39C	2	20	40	6-1/2	2-19/32	2-1/32	6	S	S	
D	2	20	40			2-57/64		WW	S	
65B	1	40	40	8	3-3/8	2-3/32	3-3/4	S	S	
C	1	40	40					WW	S	
82B	1	42	42	8	3-3/8	2-3/32	3-3/4	WW	S	
150N	9	20	180	8	2-17/32	4-7/16	7-1/2	S	S	X
AB	9	20	180			4-7/16		S	S	X
AC	9	20	180			4-9/16		S	S	X
AD	3	20	60			3-1/4		WW	S	
AE	4	20	80			3-19/32		WW	S	
AF	4	20	80			3-19/32		WW	S	X
AG	4	20	80			3-19/32		WW	S	X
AJ	5	20	100			3-61/64		WW	S	
AK	5	20	100			3-61/64		WW	S	X
AL	5	20	100			3-61/64		WW	S	X
AN	6	20	120			4-19/64		WW	S	
AP	6	20	120			4-19/64		WW	S	X
AR	6	20	120			4-19/64		WW	S	X
AS	6	20	120			4-19/64		WW	S	X
AT	6	20	120			4-19/64		WW	S	X
AU	6	20	120			4-19/64		WW	S	X
AW	6	20	120			4-19/64		WW	S	X
AY	6	20	120			4-19/64		WW	S	X
BB	6	20	120			4-19/64		WW	S	X
BC	7	20	140			4-11/64		WW	S	
BD	7	20	140			4-41/64		WW	S	X
BE	7	20	140			4-41/64		WW	S	X
BG	8	20	160			5		WW	S	
BH	8	20	160			5		WW	S	X
BJ	8	20	160			5		WW	S	X
BL	9	20	180			5-11/32		WW	S	X
BM	9	20	180			5-11/32		WW	S	X
BN	9	20	180			5-11/32		WW	S	X
BP	3	20	60			3-1/16		WW	WW	
BR	4	20	80			3-13/32		WW	WW	
BS	4	20	80			3-13/32		WW	WW	X
BT	4	20	80			3-13/32		WW	WW	X
150BU	5	20	100	8	2-17/32	3-47/64	7-1/2	WW	WW	
BW	5	20	100			3-47/64		WW	WW	X
BY	5	20	100			3-47/64		WW	WW	X
CA	6	20	120			4-5/64		WW	WW	
CB	6	20	120			4-5/64		WW	WW	X
CC	6	20	120			4-5/64		WW	WW	X
CD	6	20	120			4-5/64		WW	WW	X
CE	6	20	120			4-5/64		WW	WW	X
CF	6	20	120			4-5/64		WW	WW	X
CG	6	20	120			4-5/64		WW	WW	X
CH	6	20	120			4-5/64		WW	WW	X
CJ	6	20	120			4-5/64		WW	WW	X
CK	7	20	140			4-13/32		WW	WW	
CL	7	20	140			4-13/32		WW	WW	X
CM	7	20	140			4-13/32		WW	WW	X
CN	8	20	160			4-31/64		WW	WW	
CP	8	20	160			4-31/64		WW	WW	X
CR	8	20	160			4-31/64		WW	WW	X
CS	9	20	180			5-5/64		WW	WW	
CT	9	20	180			5-5/64		WW	WW	X
CU	9	20	180			5-5/64		WW	WW	X
CW	9	20	180			5-5/64		WW	WW	X
CY	9	20	180			5-5/64		WW	WW	X
DA	9	20	180			5-5/64		WW	WW	X
178AA	3	20	60	6-1/2	2-19/32	3-1/4	6	WW	S	
AB	4	20	80			3-19/32		WW	S	
AC	5	20	100			3-61/64		WW	S	
AD	5	20	100			3-61/64		WW	S	X
AE	6	20	120			4-19/64		WW	S	
AF	6	20	120			4-19/64		WW	S	X
AG	6	20	120			4-19/64		WW	S	X
AH	6	20	120			4-19/64		WW	S	X

TABLE A (Contd)

CODE	NO. OF ROWS	TERMINALS		LENGTH (INCHES)	WIDTH (INCHES)	DEPTH (INCHES)	MTG CTR (INCHES)	TYPE OF TERM.		STRAPPED
		PER ROW	TOTAL NO.					CABLE SIDE	X CONN SIDE	
AJ	6	20	120			4-19/64		WW	S	X
AK	7	20	140			4-41/64		WW	S	
AL	7	20	140			4-41/64		WW	S	X
AM	7	20	140			4-41/64		WW	S	X
AN	8	20	160			5		WW	S	
AP	8	20	160			5		WW	S	X
178AR	8	20	160	6-1/2	2-19/32	5	6	WW	S	X
AS	9	20	180			5-11/32		WW	S	X
AT	9	20	180			5-11/32		WW	S	
AU	6	20	120			5-11/32		S	S	
182C	1	100	100	16	3-3/8	2-3/32	11-3/4	S	S	
D	1	100	100			2-13/64		WW	S	
183R	4	50	200	16	3-15/32	3-15/64	11-3/4	WW	S	
S	5	50	250			4-5/64		WW	S	
T	6	50	300			4-27/64		WW	S	
U	4	50	200			3-23/32		WW	S	
W	3	50	150			3-3/8		WW	S	
Y	7	50	350			4-49/64		WW	S	
AA	8	50	400			5-21/32		WW	S	X
AB	8	50	400			5-1/8		WW	S	
AC	5	50	250			4-5/64		WW	S	X
AD	7	50	350			4-49/64		WW	S	X
AE	4	50	200			4-3/8		WW	S	
AF	8	50	400			5-21/32		WW	S	
AG	9	50	450			5-31/64		WW	S	X
AH	9	50	450			5-31/64		WW	S	
AJ	3	50	150			3-1/16		WW	WW	
AK	4	50	200			3-13/32		WW	WW	
AL	4	50	200			3-5/8		WW	WW	
AM	4	50	200			4-1/16		WW	WW	
AN	5	50	250			3-47/64		WW	WW	
AP	5	50	250			3-47/64		WW	WW	X
AR	6	50	300			4-1/16		WW	WW	
AS	7	50	350			4-13/32		WW	WW	
AT	7	50	350			4-13/32		WW	WW	X
AU	8	50	400			4-47/64		WW	WW	
AW	8	50	400			5-17/64		WW	WW	
AY	8	50	400			5-17/64		WW	WW	X
BA	9	50	450			5-5/64		WW	WW	
BB	9	50	450			5-5/64		WW	WW	X
BC	8	50	400			5-17/64		WW	WW	
198B	4	51	204	16	2-9/16	2-7/8	15-1/2	S	S	
C	6	51	306			3-9/16		S	S	
D	8	51	408			4-3/8		S	S	
198E	7	51	357	16	2-9/16	3-15/16	15-1/2	S	S	X
F	4	51	204			3-19/32		WW	S	
G	6	51	306			4-19/64		WW	S	
H	8	51	408			5		WW	S	
J	7	51	357			4-41/64		WW	S	X
K	9	51	459			5-23/64		WW	S	
L	7	51	357			4-41/64		WW	S	
M	4	51	204			3-33/64		WW	S	
N	6	51	306			4-7/32		WW	S	
P	7	51	357			4-9/16		WW	S	
R	8	51	408			4-59/64		WW	S	
AB	10	51	510			6-55/64		WW	S	
AC	10	51	510			5-17/32		WW	S	
AD	8	51	408			4-59/64		WW	S	
AE	8	51	408			4-59/64		WW	WW	
210A	2	50	100	13-1/2	2-25/32	2-5/32	13	S	S	
C	3	50	150			2-9/32		S	S	
E	4	50	200			2-21/32		S	S	
F	5	50	250			3-1/32		S	S	
G	6	50	300			3-3/8		S	S	
H	2	50	100			2-61/64		WW	S	
J	2	50	100			3-1/64		WW	S	
K	3	50	150			3-3/32		WW	S	
L	3	50	150			3-27/64		WW	S	

TABLE A (Contd)

CODE	NO. OF ROWS	TERMINALS		LENGTH (INCHES)	WIDTH (INCHES)	DEPTH (INCHES)	MTG CTR (INCHES)	TYPE OF TERM.		STRAPPED
		PER ROW	TOTAL NO.					CABLE SIDE	X-CONN SIDE	
M	4	50	200			3-7/16		WW	S	
N	5	50	250			3-49/64		WW	S	
P	6	50	300			4-9/64		WW	S	
211A	4	25	100	8	2-5/8	2-7/8	7-1/2	S	S	
B	4	25	100			2-7/8		S	S	X
C	4	25	100			2-7/8		S	S	X
D	2	25	50			2-5/32		S	S	
E	3	25	75			2-9/32		S	S	X
G	5	25	125			3-7/32		S	S	X
H	5	25	125			3-7/32		S	S	X
J	6	25	150			3-3/8		S	S	X
211K	6	25	150	8	2-5/8	3-3/8	7-1/2	S	S	X
L	6	25	150			3-3/8		S	S	
M	5	25	125			3		S	S	
N	8	25	200			4-3/32		S	S	X
P	4	25	100			3-21/32		WW	S	
R	4	25	100			3-21/32		WW	S	X
S	4	25	100			3-21/32		WW	S	X
T	2	25	50			2-61/64		WW	S	
U	5	25	125			4-1/64		WW	S	X
W	5	25	125			4-1/64		WW	S	X
Y	6	25	150			4-9/64		WW	S	X
AA	6	25	150			4-9/64		WW	S	X
AB	3	25	75			3-3/32		WW	S	
AC	6	25	150			4-9/64		WW	S	
AD	5	25	125			3-51/64		WW	S	
AE	8	25	200			4-27/32		WW	S	X
AF	8	25	200			4-27/32		WW	S	
AG	7	25	175			4-17/32		WW	S	
AH	8	25	200			4-3/32		WW	S	
AJ	8	25	200		2-21/32	4-27/32		WW	S	
AK	8	25	200			4-27/32		WW	WW	
268A	3	20	60	8	3-3/8	3-3/8	3-3/4	WW	S	
B	4	20	80			3-23/32		WW	S	
C	5	20	100			4-5/64		WW	S	
D	6	20	120			4-27/64		WW	S	
E	8	20	160			5-1/8		WW	S	
286A	14	22	308	7-1/16	7-1/2	2	2-13/16	WW	WW	
B	14	6	84	7-1/16		2	1-5/16	WW	WW	
C	14	26	364	8-5/16		2	3-7/64	WW	WW	
336A	4	64	256	16	3-15/32	4-19/32	11-3/4	WW*	WW*	
B	4	64	256			4-19/32		WW*	WW*	X
E	8	64	512			5-5/16		WW*	WW	
F	8	64	512			5-5/16		WW*	WW	X
G	4	50	200			4-19/32		WW*	WW*	
H	6	50	300			5-5/16		WW*	WW	
J	6	64	384			5-5/16		WW*	WW	
K	6	64	384			6-7/32		WW*	WW*	

\* Indicates bifurcated terminals

S - Solder terminals

WW - Wire-wrap terminals

TABLE B

CODE	TERMINAL STRIP APPLICATION	LENGTH (INCHES)	WIDTH (INCHES)
37A	39C, D	5.875	2.500
37B	178AC, AD	5.875	2.875
37C	178AE-AJ	5.875	3.250
37D	178AK-AR	5.875	3.750
37E	150BC-BF	7.500	3.250
37F	150, AJ-AL, 268C	7.500	3.000
37G	150, AG, 268B	7.500	2.500
37H	183R, U	15.688	2.625
37J	150BB, 268D	7.500	3.750
37K	183T, AE	15.688	3.313
37L	183AA, AB, AF, AG	15.688	4.313
37M	178AA	5.875	2.000
37N	150AD, 268A	7.500	2.000
37P	183W	15.688	2.000

TABLE C

CODE	APPLICATION	LENGTH (INCHES)	WIDTH (INCHES)
KS-20107, L4	336A, 336B, and 336G Cross-connection side	15.87	4.25
L5	336E, 336F, 336H, and 336J Cross-connection side	15.87	5.00
L6	336K Cross-connection side	15.87	5.88
KS-20108, L4	336A, 336B, and 336G Cable side	15.87	4.12
L5	336E, 336F, 336H, and 336J Cable side	15.87	4.75
L6	336K Cable side	15.87	5.72

TABLE D

CODE	APPLICATION	LENGTH (INCHES)	WIDTH (INCHES)
KS-20132, L1	150AD		3.156
L2	150AE, AF, AG		3.500
L3	150AJ, AK, AL		3.875
L4	150AN, AP, AR, AS, AT AU, AW, AY, BB	6.688	4.219
L5	150BC, BD, BE		4.562
L6	150BG, BH, BJ		4.938
L7	150BL, BM		5.281
L8	183R		3.718
L9	183S, AC		3.875
L10	183T, 198G		4.219
L11	183U, 198F		3.500
L12	183W	15.562	3.156
L13	183Y, 183AD, 198J, L		4.562
L14	183AA, 183AF		5.468
L15	183AB, 198H		4.937
L16	183AE		4.156
L17	183AG, 198K		5.281
L18	268A		3.125
L19	268B		3.500
L20	268C	7.562	3.875
L21	268D		4.250
L22	268E		5.000