

4249

X-7550B

ENGINEERING REFERENCE DATA

B- AND G-TYPE RELAYS

BELL TELEPHONE LABORATORIES

This bulletin is the property of
BELL TELEPHONE LABORATORIES, INCORPORATED.

It is not released for publication.
When no longer needed, it should be returned
to the Standards Application Group.

Issued to

Name _____

Department _____

Location _____

INTRODUCTION

This is one of a series of Engineering Reference Data Bulletins containing information on apparatus designed by the Bell Telephone Laboratories, Incorporated, for other than military applications, and manufactured by the Western Electric Company or by other suppliers in accordance with specifications prepared by the Laboratories. It is intended primarily for use by engineers of the Laboratories, and contains information on apparatus which may be rated AT&TCo Standard, A&M Only, Component Part, or Special; codes classified ML; or codes designated for non-associate use. Codes rated Manufacture Discontinued are not included.

Items designated as PREFERRED are those recommended for use wherever practicable. Items not so designated are NONPREFERRED and should not be specified in new applications unless there is no other way of economically accomplishing the desired results. The NONPREFERRED items include (a) the older designs which may have been superseded but are still required for maintenance purposes, (b) designs more expensive to manufacture than others which may perform the same functions, and (c) items in such small demand that they are more costly to furnish.

It is planned to bring this bulletin up to date periodically; however, the information contained herein may not be complete and ratings of the items are not shown. The final selection of apparatus should, therefore, be made on the basis of the usual sources of information such as the Western Electric Apparatus Card Catalog, the manufacturing specifications, and price data. For information regarding the output of apparatus, refer to the Western Electric Report A-822.1.

This bulletin may include some codes of apparatus for which catalog cards will not be found in the Western Electric Apparatus Card Catalog. Such codes are in general rated "Component Part." This rating is applied to apparatus where it is believed that the associated telephone companies will have no need for apparatus card catalog information and orders for the apparatus from the field are not expected.

When apparatus which is not listed on a white card in the Western Electric Apparatus Card Catalog is selected for use in new applications, the Standards Engineer, Department 5241, Bell Telephone Laboratories, Incorporated, 463 West Street, New York, should be notified of the new use and probable demand so that consideration can be given to rerating the apparatus. When such new applications are made within the Laboratories, the selection should first be discussed with the department responsible for the design of the apparatus.

X-75508

X-75508
CHECK LIST

This page contains a complete list of all the pages
in this Bulletin together with the latest issue date.

Page	Date
Title	2-2-53
Introduction	4-1-55
Check List	4-1-55
Table of Contents	2-2-53
I-1 and I-2	2-2-53
I-3	4-1-55
I-4 to I-9, Inclusive	2-2-53
II-1 to II-6, Inclusive	4-1-55
III-1 and III-2	4-1-55
III-3 and III-4	2-2-53
III-5 to III-9, Inclusive	4-1-55
III-10	2-2-53
III-11 to III-20, Inclusive	4-1-55
III-21	2-2-53
III-22	4-1-55
III-23	2-2-53
III-24 and III-25	4-1-55
III-26	2-2-53
III-27 to III-33, Inclusive	4-1-55
III-34 to III-36, Inclusive	2-2-53
Section IV	2-2-53

X-75508

B AND G TYPE RELAY CODE INFORMATION

TABLE OF CONTENTS

SECTION I GENERAL

WDG. ARR. & SPRING COMBINATIONS

SECTION II CODE LISTS

B Type Relays - Page 1 thru 5

G Type Relays - Page 6

SECTION III CODE INFORMATION TABLES

Table I	B Type Relays Wdg. Arr. #1	Page 1
Table II	B Type Relays Wdg. Arr. #2	Page 6
Table III	B Type Relays Wdg. Arr. #3	Page 15
Table IV	B Type Relays Wdg. Arr. #4	Page 17
Table V	B Type Relays Wdg. Arr. #5	Page 20
Table VI	B Type Relays Wdg. Arr. #6	Page 22
Table VII	B Type Relays Wdg. Arr. #7 to #39	Page 24
Table VIII	G Type Relays Wdg. Arr. #1	Page 30
	G Type Relays Wdg. Arr. #2	Page 31
	G Type Relays Wdg. Arr. #3 to #39	Page 35

SECTION IV REFERENCE NOTES

x-75508

SECTION I
GENERAL

"B" AND "G" TYPE RELAYS

Introduction

This book, specification X-75508, contains relay code information for all coded "B" and "G" type relays that are rated Standard on the date of this issue. The information is arranged in a form to facilitate the selection of relays to meet particular circuit requirements.

The relay code information, i.e., code number, spring combinations, contact metal, stop pins, winding and adjustment information is listed according to the winding arrangements in Tables I to VII inclusive for "B" type relays and Table VIII for "G" type relays. In each table the relays are listed in order on the basis of the resistance of the primary winding.

The "B" type relay code numbers below 1000 are assigned to the iron relays and from 1000 up to the permalloy relays.

To locate the design information for a particular coded relay, lists of codes in numerical order are provided preceding Table I. These show the table number and the page number where this information may be found. Where there are several codes with the same winding, we have indicated that relays with a BM combination are preferred codes.

General

The "B" type relay is commonly used as a supervisory relay in telephone systems to control either the lighting of lamps or the operation of other relays. A supervisory relay may be connected in the tip or ring conductor of a talking circuit and thus must be low impedance to prevent line unbalance. It may also be connected inside a repeat coil circuit for use both as a local grade transmission battery supply and as a supervisory relay. It may also be used as a sensitive switching or supervisory relay with a high and low resistance winding for controlling the operate and release of an external series relay.

The "B" type relay is also used where a low resistance relay connected in series with other relays in a marginal circuit condition must operate without disturbing appreciably the operation of the series relays, or where a high resistance low operate current relay must operate in parallel with another relay without disturbing appreciably the operation of the parallel relay.

The "G" type relay is used where a higher impedance supervisory relay is required for toll grade transmission battery supply. Its construction differs from the "B" type only in that laminations are added to its core.

Because of the more reliable contact performance of the "UA" type relay, the "B" and "G" type relays should be used only when greater sensitivity is required than can be obtained with the "UA" relay. The "UA" relay is capable of operating a make, break, 2 makes, make and break, or break make combination, with 10 grams contact pressure, on approximately 52, 62, 59, 65, and 75 ampere turns, respectively. It may also be equipped with permalloy shells over the core to increase its impedance when it is used as a supervisory relay in a transmission circuit. This is in contrast to "B" and "G" type relays which are capable of operating similar combinations on approximately 25 ampere turns.

Construction (See Fig. 1)

The "B" type relay, as well as the "G" type relay, is a flat or punched part type of relay, the armature and rectangular core being punched from sheet silicon steel. A permalloy core and armature may be used on "B" type relays to obtain greater sensitivity. The core of each relay is enlarged at the front end to form the pole-piece and at the rear end to form the frame for mounting the armature and springs.

Six layers of silicon steel are riveted on each side of the "G" type relay core. The laminations and increased cross section of the "G" type relay core provide comparatively high impedance windings and permit this relay to be bridged directly across the talking circuit.

The armature for each relay is U-shaped, the closed end extending across the front of the coil opposite the front, or pole-piece end, of the core. The legs of the armature extend above and below the coil and are riveted at the rear to a hinge of thin steel which is assembled in the pile-up. A spring, which can be adjusted to provide armature back tension is attached to the bottom of the armature. The armature is generally equipped with one nickel-silver disc, or stop pin, to facilitate its release. Since the armatures of both "B" and "G" type relays are not insulated from the relay frame, or cover, it is advisable not to connect direct battery to the armature of these relays.

Contact springs of nickel-silver are located above the coil. Each relay is provided with three adjusting screws which are held in slots in the brass front spool-head. These screws, with their tips resting against the contact and armature springs, are used for adjusting the positions of the contact springs and the tension of the armature spring.

The tips of the front and back contact adjusting screws are insulated. The position of the front contact spring controls the operated position of the armature. The position of the back contact spring controls the non-operated position of the armature. The tension of the armature spring controls the armature back tension and back contact pressure.

The "B" type relay is generally furnished with an individual dust proof cover made of .022" thick sheet steel. When a cross-talk proof cover is required a heavy steel (.064" thick) cover is furnished. The "G" type relay is always furnished with an individual cross-talk proof cover. All covers are screwed to the relay frame, and have removable caps for access to the front of the relay for adjustment and inspection.

Modified Design

To improve the stability of adjustments, the "B" and "G" type relay designs have been modified recently. The modified design is interchangeable with the previous design and has the following changes:

- a) The relay structure is secured to a stiff shell (.036" thick) with two comparatively free positioning brackets at the rear of the core and a motion limiting support bracket at the front end of the core. The L-shaped legs of each bracket are made flexible enough to conform to the shell without distortion of the armature and core alignment.
- b) A very stiff mounting cross-piece is welded across the rear opening of the shell for securing the relay to the mounting plate. Any distortion of this bracket has very little effect on the adjustment of the relay.
- c) The adjusting screws are held in nylon bushing inserts. Each adjusting screw taps its own screw threads in the nylon bushing as it is inserted. This arrangement provides more thread engagement and eliminates the need for any shop adjustment to meet the screw torque requirements.

- d) Pretension forming of the .032 inch thick contact springs minimizes distortion of the relay structure during the initial shop adjustment.

Contact Metal

The "B" and "G" type relays are equipped with the "Point and Disc." type contacts of #2 (Palladium metal) in a standard or heavy size. The erodible volume of the standard size is $.86 \times 10^{-6}$ cu. in. and the heavy size is 29×10^{-6} cu. in.

For a contact load of a 700 ohm R or U type relay operating on 48 volts without protection, the life of the contacts is approximately 250,000 operations for the standard size and 8,000,000 operations for the heavy size. For any Tungsten lamp load up to 1 ampere steady state, the life of the contacts is 100,000 operations for the standard size and 1,000,000 operations for the heavy size.

Spring Combinations

The spring combinations are the same for both "B" and "G" type relays and are shown on Fig. 2. These spring combinations have different mechanical adjustments in accordance with the "armature travel" and "front contact make" as indicated in BSP Section A461.002.

The following is a list of the available spring combinations:

- Fig. 1 - Make
- Fig. 2 - Break
- Fig. 3 - Break Make
- Fig. 4 - Break and Make*
- Fig. 5 - Make-Make (No sequence required)
- Fig. 6 - Make (Flexible Front Contact**)
- Fig. 7 - Make* and Make (No Sequence-Flexible Contacts)
- Fig. 8 - Break Make (Flexible Front Contact**)
- Fig. 9 - Make* and Break (Flexible Contacts)
- Fig.10 - Make* (Flexible Contact)
- Fig.11 - Break Make (Flexible Front** and Back Contacts)
- Fig.12 - Break (Flexible Back Contact)
- Fig.13 - Make (Flexible Front Contact)
- Fig.14 - Break Make (Flexible Front Contact)
- Fig.15 - Make-Make (No Sequence-Flexible Front Contact)
- Fig.16 - Break Make (Flexible Back Contact)

*This spring unit is insulated from the relay frame.
**The release capability of relays equipped with a Fig. 6,8 or 11 combination is limited because the flexible contact of these

X-75508

combinations allows the armature to come up to the core. To limit the movement of the flexible spring, Figures 13 and 14 were designed to replace Figure 6 and 8, respectively.

Winding Arrangements

The winding arrangements are the same for both "B" and "G" type relays and are shown on Fig. 3. The core construction of these relays requires the coil to be wound directly on the core of the relay.

The number of winding and spring terminals is limited by the width of the cover. On some relays requiring 8 or 9 terminals in the terminal pile-up, the connection to the armature of the relay is obtained by an auxiliary terminal under one of the mounting screws. Relays using the auxiliary terminal are shown in the apparatus catalog.

In order to prevent high loss, longitudinal unbalance and cross-talk, the impedance of series supervisory relays used in many transmission circuits must be low. The non-reactive type which has parallel windings with the ends of one winding soldered together (see winding arrangement No. 38 in Fig. 3) and the non-inductive shunt type which has one inductive winding connected in parallel with a non-inductive winding (see winding arrangement No. 4 in Fig. 3) are low impedance relays and suitable for this use.

Because of required manufacturing tolerances, the transmission and operation characteristics of these two types of relays will not be identical. In general, the non-reactive relay will be slightly better than the non-inductive shunt relay in its operational characteristics but poorer in transmission.

Selection of Covers

A "B" type relay connected in a repeating coil transmission circuit so that it effectively bridges one, or both, windings of the repeating coil will, in general, require a cross-talk proof cover. It always requires a cross-talk proof cover when it is used as a battery feed relay in a bridged impedance transmission circuit.

A "B" type relay in series with the battery supply to the repeating coil with battery, relay, and resistance (if any), bridged by a condenser, should be provided with a cross-talk proof cover, except for those relays having an inductive winding of more than 7500 turns.

Cross-talk proof covers may not be required for "B" type relays with a

permalloy core, a non-inductive shunt, a non-reactive winding, or bare copper over the core. Their status can be determined only by a study of the individual cases.

Mounting Centers

The mounting centers for "B" or "G" type relays are 1-3/4" vertical and 1-1/4" horizontal. Both relays are insulated from the mounting plate but the relay shell is electrically connected to the relay armature.

Capability

The high sensitivity of the "B" type relay is attained by the use of low armature back tension (as low as one gram), and a large winding space (high G or N²/R). However, the low tension may tend to give an unreliable back contact closure. (See paragraph on contact reliability.)

The "G" type relay has somewhat greater pull than the "B" type relay for equal energization, but due to the laminations on the core it has less winding space than the "B" type relay.

The range of operate requirements specified for "B" and "G" type relays is obtained by variations in the initial or armature back tension (1 gram minimum - 9 grams maximum), unoperated air gap, operated air gap (front contact make), and magnetic material (silicon steel or permalloy).

The approximate range of operate requirements are 23 to 125 ampere turns for iron "B" type relays, 18 to 70 ampere turns for permalloy "B" type relays, and 23 to approximately 100 ampere turns for "G" type relays.

Hold requirements are not specified for "B" and "G" type relays since they are the same as the operate requirements.

The ratio of the readjust release requirement to the readjust operate requirement may vary from 0 to 60% for the "G" type relays, 20 to 55% for iron "B" type relays, and 45 to 60% for permalloy "B" type relays. The higher percentage release values are obtained by adjusting to the higher armature travels at the sacrifice of sensitivity.

Current Flow Requirements

The current flow requirements shown for the coded relays in the tables are readjust requirements. The operate test requirement is 105% of the operate readjust requirement and the non-operate and release test requirements are 95% of the non-operate

X-75508

readjust and release readjust requirements. A non-operate or release requirement must always be used in addition to the operate requirement to provide adequate armature tension and back contact pressure.

Requirements differing from those shown in tables I to VIII, within the capability of the relay, have been specified to meet particular circuit conditions. When necessary, such requirements can be obtained from the relay requirements group.

Soak Requirements

The operating characteristics of "B" and "G" type relays are appreciably affected by soak currents that are in excess of the operate requirement. To insure satisfactory relay operation under soak conditions, these relays are adjusted to operate, non-operate or release after a specified soak current.

For relays that release on open circuit only, a soak requirement is not generally necessary, even though it may be subject to a soak in circuit. However, if relays with low back tensions are adjusted on the basis of non-soak requirements they may have a tendency to stick operated when they are released in open circuit after a soak.

When a soak requirement is necessary, a current flow soak equivalent to 125 ampere turns for "B" type relays, and 275 ampere turns for "G" type relays is specified. Where the relay receives a circuit soak in excess of the specified soak, the standard 5% margin between the worst circuit release and the test release currents should be increased by the amount shown on the following table. Where the additional margins cannot be obtained, the maximum soak value should be specified. Under this condition, the standard 5% margin between the worst circuit release and the test release prevails.

<u>Circuit Soak Ampere Turns</u>	<u>Additional Allowance Between Release Test and Worst Circuit</u>	
	<u>"B" Type</u>	<u>"G" Type</u>
200	2.5%	
300	4.5	1.5%
400	6.	6.2
500	7.	9.4
600	8.	11.8
700	9.	13.6
800	10.	15.0
900	11.	15.0

Equivalent soak requirements may be specified for "B" and "G" type relays having non-soak requirements and which may be subjected to a circuit soak condition. Conversely, equivalent non-soak requirements may be specified for relays having

after soak requirements and intended for use in circuits where they are not subjected to a circuit soak condition.

Contact Reliability

For such relays as the "R" and "U" type relays, contact pressures are obtained by tensioning the contact springs to a specified value and also providing sufficient contact follow between those springs which make contact when the relay operates.

No spring tension or contact pressure requirements are specified for "B" and "G" type relays. The adjustment on these relays can be such that, when they are operated on the test or readjust operate requirement, the front contact pressure may be practically zero. A margin must be provided between the readjust and worst circuit operate currents to obtain sufficient front contact pressure to provide a reliable contact closure. A relatively high non-operate current must be specified and the necessary non-operate worst circuit margin provided to obtain a reliable back contact closure. In effect this operate margin and required back contact pressure reduces the sensitivity of the relay.

From laboratory tests, it was concluded that for these relays a contact pressure of 4.5 grams with a non-flexible spring and 3 grams with a flexible spring would give a reasonably reliable contact closure. However, there is a possibility that a momentary opening of the contacts with these pressures may occur due to frame vibration or external shock. In view of this, it has been the practice to design for maximum possible contact pressure consistent with meeting the performance requirements of the relay.

In addition to providing these contact pressures, relays held operated through these contacts should have slow release characteristics.

On spring combinations 5, 7 and 15 one of the contact springs is a short .010" thickness spring attached to the right side of the armature at the front end. Its contact pressure, in the operated position, depends entirely upon the build-up and follow of the thin spring. Since this spring may have only a minimum follow of .005" before the movement of the armature is stopped by the #1 contact or #1 stop spring, its contact pressure may not exceed 1.5 grams. All additional pressure exerted on the armature will be taken up by the other make contacts. For this reason, the least important circuit function should be assigned to the contacts of the short spring.

X-75508

Allowable Heating

For all types of insulation and windings the maximum mean winding temperatures for normal operation should not exceed 225°F.

For trouble heating periods of indefinite duration the maximum mean winding temperatures for black enamel insulation should not exceed 250°F. Where trouble conditions would not occur, or recur, for a cumulative total of 48 hours during the 40 year life of the relay, the mean winding temperatures may be allowed to reach 325°F for enamel insulation and 360°F for silk, nylon, or heavy formex insulation. Where relays are operated for longer than 48 hours at this temperature there is a tendency for the insulation to break down and further increase the wattage.

Under a constant voltage condition, the maximum allowable initial wattage for B and G type all copper wire winding is

Normal (225°F)	6.7 watts
Trouble (250°F)	8.3 watts
Trouble (325°F)	13.82 watts
Trouble (360°F)	16.9 watts

Under a constant wattage condition, the maximum allowable initial wattage for B and G type all resistance wire windings is

Normal (225°F)	5 watts
Trouble (250°F)	6 watts
Trouble (325°F)	8.9 watts
Trouble (360°F)	10.3 watts

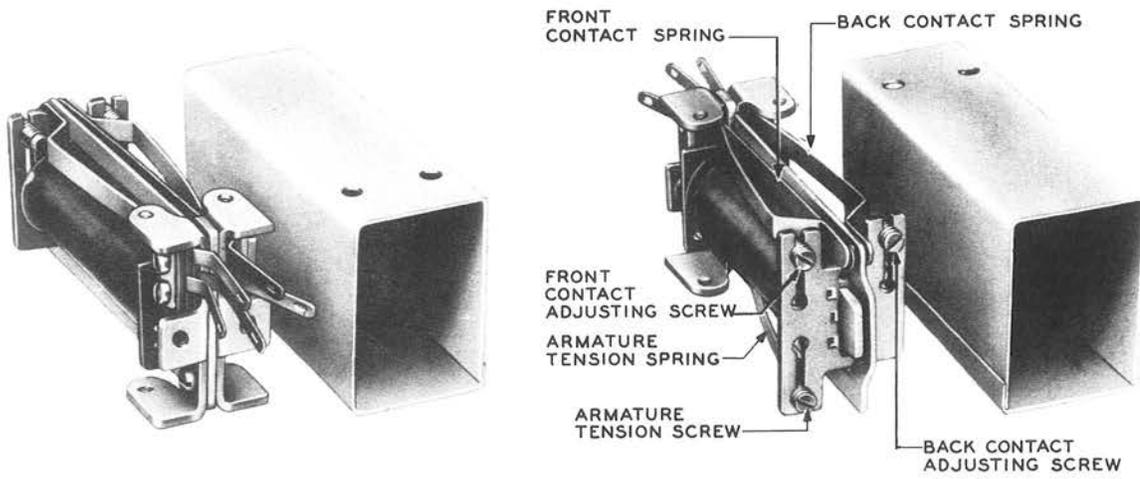
Where service conditions arise in which other than a constant voltage is used across the winding or where windings are wound with both copper and resistance wire, consult the relay requirements group.

Stop Discs

In general B and G type relays are equipped with one stop disc. min. .005" max. .010".

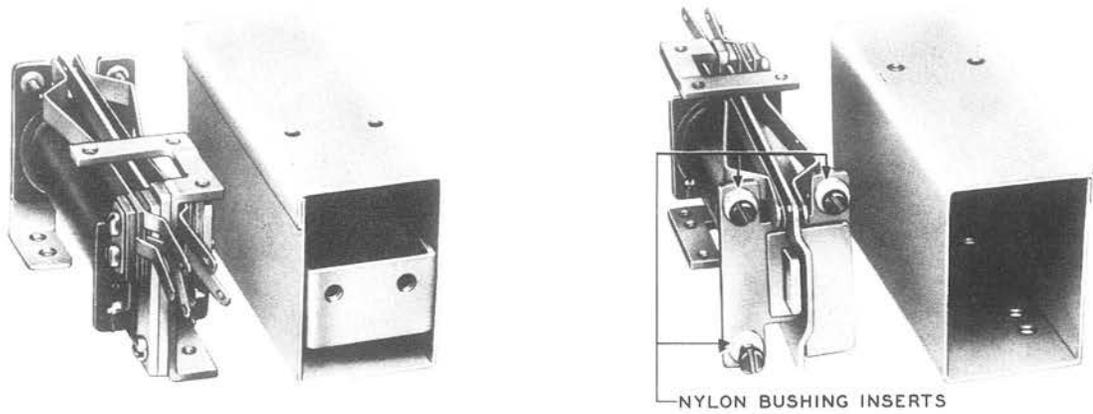
x-75508

B TYPE RELAY



INITIAL DESIGN

x-75508

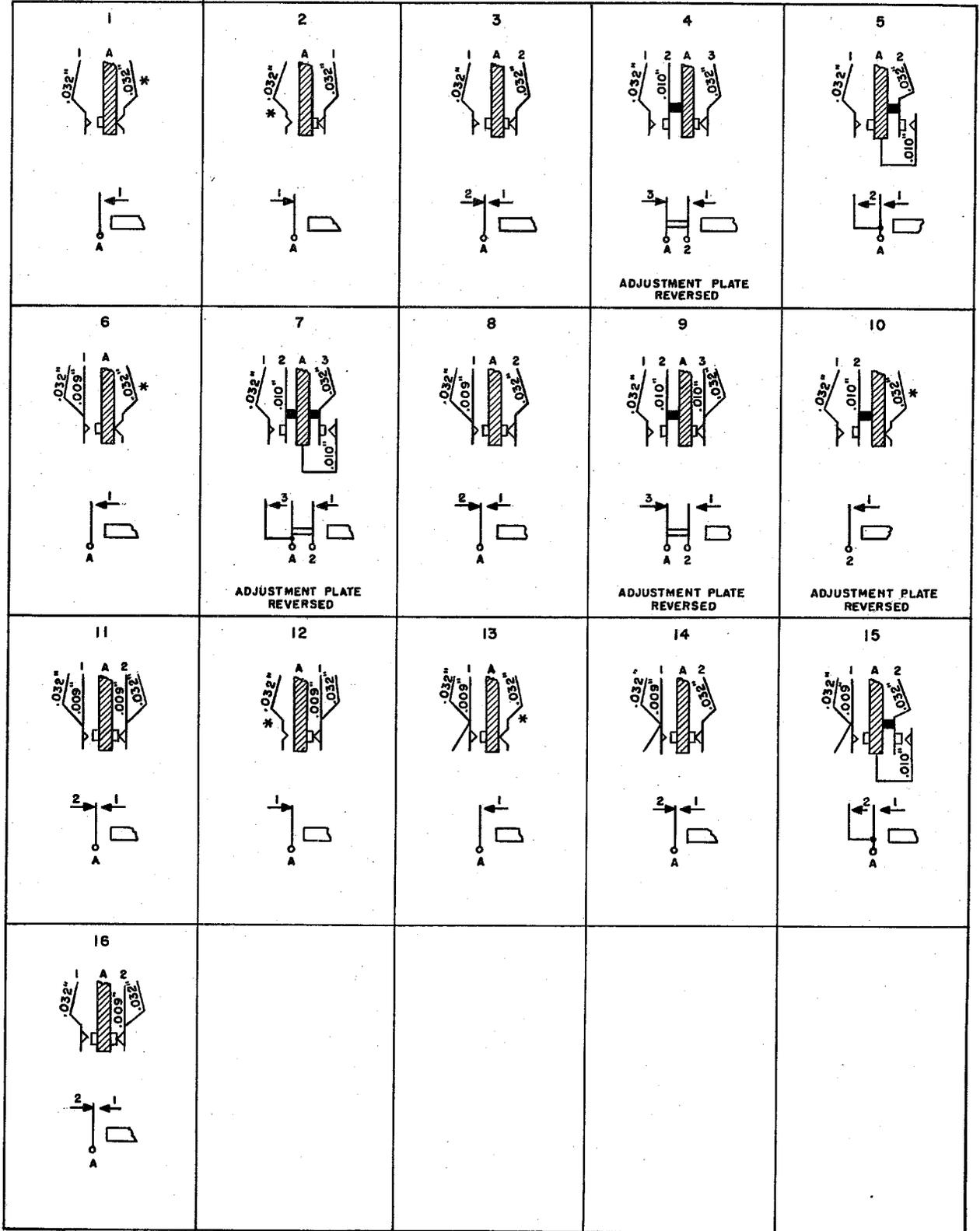


MODIFIED DESIGN

Fig. 1

"B" AND "G" TYPE RELAYS
 SPRING COMBINATIONS

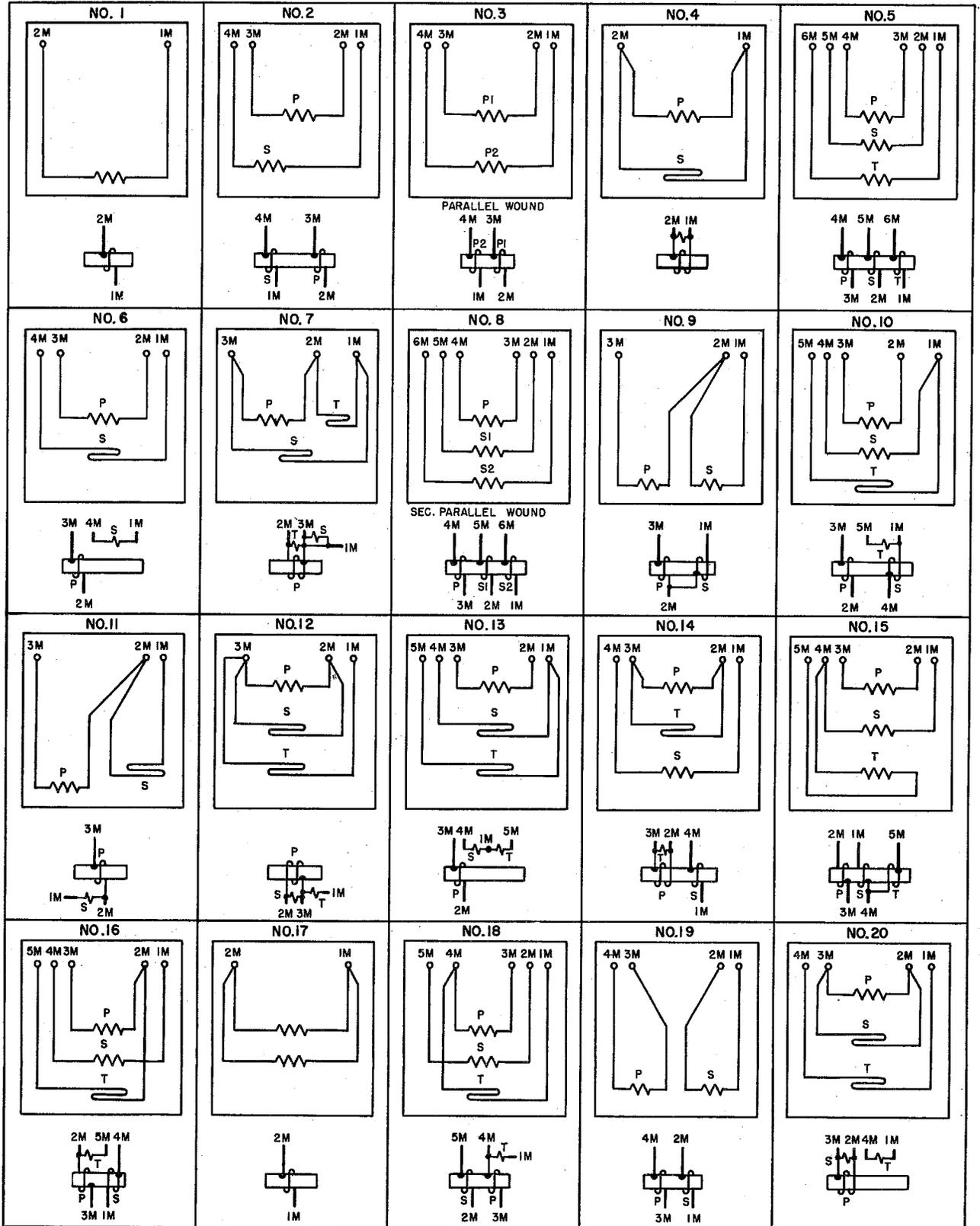
X-75508



* NO CONTACT - USED FOR ADJUSTMENT

Fig. 2

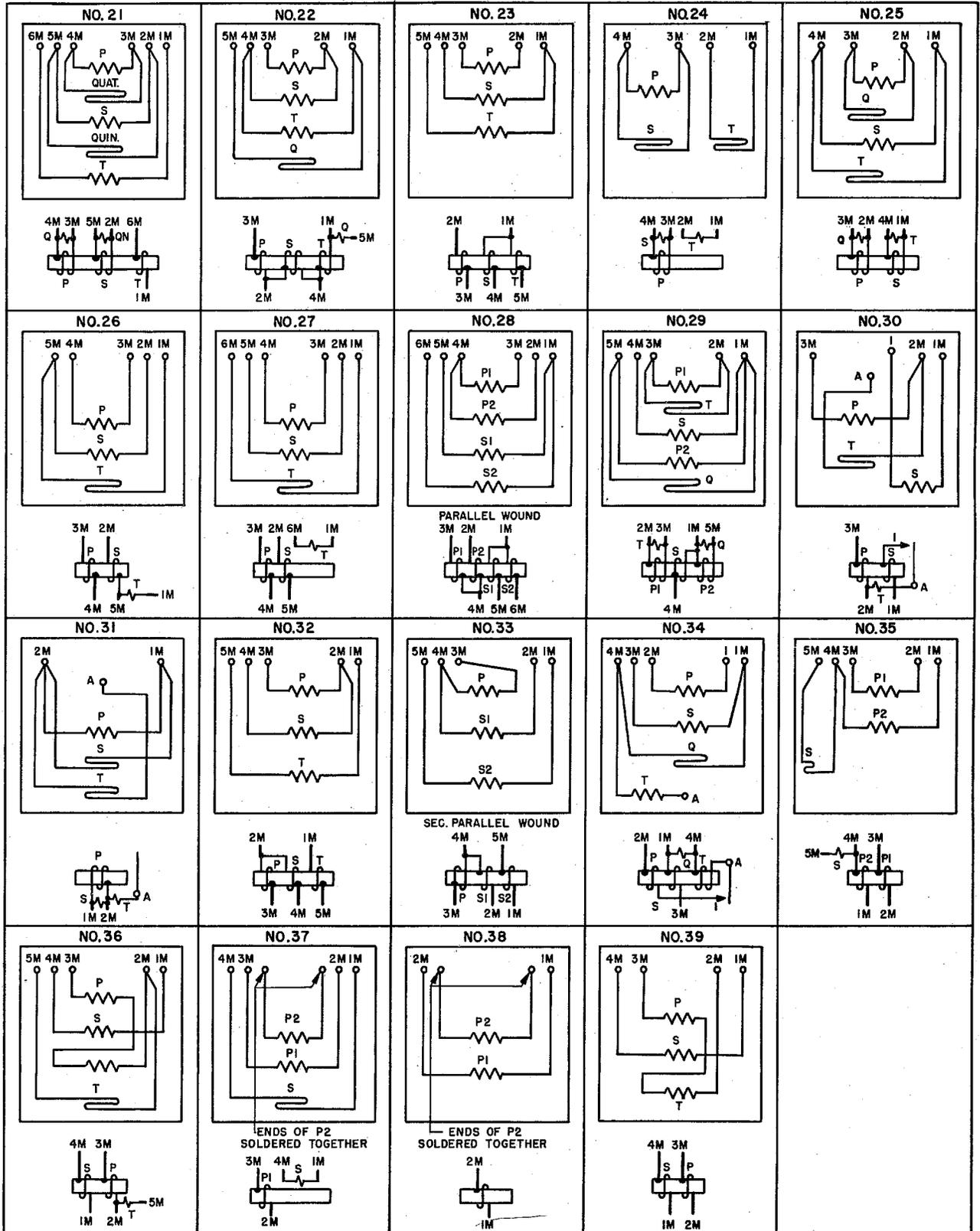
"B" AND "G" TYPE RELAYS WINDING ARRANGEMENTS
TERMINAL END



X-75508

Fig. 3, Sheet 1

"B" AND "G" TYPE RELAYS WINDING ARRANGEMENTS
TERMINAL END



X-75508

Fig. 3, Sheet 2

SECTION II
CODE LISTS

B TYPE RELAYS

Code List & Cross Reference Sheets

Code	Table No.	Page									
B1	IV	17	B51	II	13	B101	II	14	B151	I	1
B2	IV	17	B52	Use B365		B102	II	7	B152	MD	
B3	IV	17	B53	IV	17	B103	I	3	B153	I	1
B4	IV	17	B54	III	15	B104	MD		B154	MD	
B5	I	1	B55	II	11	B105	II	8	B155	VII	26
B6	I	4	B56	I	4	B106	MD		B156	MD	
B7	Use B313		B57	II	7	B107	V	20	B157	I	4
B8	I	2	B58	Use B1062		B108	V	20	B158	MD	
B9	I	1	B59	VII	24	B109	MD		B159	II	6
B10	I	1	B60	I	3	B110	MD		B160	I	4
B11	II	12	B61	VII	25	B111	V	21	B161	MD	
B12	IV	20	B62	Use B9		B112	I	3	B162	I	1
B13	II	7	B63	Use B271		B113	IV	18	B163	II	12
B14	III	15	B64	I	2	B114	Use B168		B164	II	7
B15	I	1	B65	I	2	B115	MD		B165	IV	18
B16	Use B401		B66	I	4	B116	VII	25	B166	Use B10	
B17	I	3	B67	I	3	B117	III	15	B167	I	4
B18	I	3	B68	I	4	B118	MD		B168	II	11
B19	MD		B69	II	12	B119	I	2	B169	II	11
B20	MD		B70	I	2	B120	II	7	B170	II	14
B21	I	2	B71	Use B293		B121	I	3	B171	I	3
B22	I	2	B72	MD		B122	I	3	B172	II	7
B23	II	13	B73	Use B361		B123	VII	24	B173	Use B1055	
B24	I	4	B74	II	9	B124	I	2	B174	MD	
B25	I	4	B75	I	3	B125	MD		B175	II	11
B26	I	3	B76	I	1	B126	I	2	B176	II	7
B27	IV	19	B77	II	9	B127	Use B242		B177	Use B1	
B28	I	1	B78	I	1	B128	I	2	B178	Use B160	
B29	MD		B79	VII	25	B129	VII	26	B179	MD	
B30	MD		B80	MD		B130	VII	25	B180	II	14
B31	I	3	B81	IV	17	B131	Use B273		B181	I	5
B32	III	16	B82	MD		B132	MD		B182	MD	
B33	I	1	B83	I	3	B133	I	5	B183	II	12
B34	I	5	B84	VII	25	B134	MD		B184	MD	
B35	II	13	B85	I	2	B135	I	5	B185	Use B441	
B36	I	1	B86	I	4	B136	Use B41		B186	I	3
B37	I	3	B87	Use B459		B137	MD		B187	MD	
B38	II	6	B88	Use B36		B138	Use B257		B188	MD	
B39	II	7	B89	MD		B139	I	5	B189	1	4
B40	II	9	B90	II	8	B140	Use B-34		B190	Use B59	
B41	II	13	B91	I	4	B141	MD		B191	II	7
B42	VII	24	B92	IV	19	B142	Use B157		B192	IV	17
B43	I	2	B93	Use B197		B143	VII	26	B193	MD	
B44	Use B268		B94	Use B10		B144	Use B392		B194	VII	26
B45	II	12	B95	MD		B145	Use B139		B195	MD	
B46	I	3	B96	Use B-9		B146	II	14	B196	VII	26
B47	I	4	B97	I	4	B147	I	5	B197	VII	25
B48	MD		B98	I	4	B148	I	2	B198	Use B390	
B49	IV	19	B99	Use B160		B149	I	2	B199	II	9
B50	II	14	B100	VII	24	B150	MD		B200	I	1

x-75508

X-75508

Code	Table No.	Page									
B201	II	10	B251	MD		B301	I	5	B351	Use B-33	
B202	I	2	B252	VI	22	B302	II	7	B352	Use B33	
B203	I	2	B253	IV	19	B303	Use B9		B353	I	4
B204	MD		B254	Use B1082		B304	Use B1		B354	Use B586	
B205	Use B276		B255	MD		B305	I	5	B355	MD	
B206	IV	17	B256	II	7	B306	II	13	B356	Use B441	
B207	Use B456		B257	II	8	B307	II	8	B357	MD	
B208	II	7	B258	II	10	B308	MD		B358	I	5
B209	I	5	B259	II	13	B309	Use B34		B359	II	10
B210	II	12	B260	I	2	B310	Use B36		B360	Use B1066	
B211	I	1	B261	VI	22	B311	Use B36		B361	VII	24
B212	Use B169		B262	MD		B312	Use B300		B362	I	2
B213	Use B457		B263	I	3	B313	I	2	B363	Use B421	
B214	VII	25	B264	MD		B314	Use B222		B364	MD	
B215	I	4	B265	I	2	B315	I	4	B365	II	12
B216	Use B1089		B266	I	1	B316	Use B201		B366	II	11
B217	Use B219		B267	Use B275		B317	MD		B367	I	1
B218	VI	23	B268	I	1	B318	II	10	B368	I	3
B219	II	13	B269	Use B256		B319	Use B392		B369	I	4
B220	Use B349		B270	Use B1157		B320	I	4	B370	II	7
B221	Use B465		B271	II	10	B321	MD		B371	VI	22
B222	I	4	B272	IV	19	B322	I	3	B372	MD	
B223	Use B369		B273	II	8	B323	I	5	B373	IV	19
B224	MD		B274	MD		B324	II	10	B374	I	2
B225	VI	22	B275	VI	23	B325	II	11	B375	Use B-2	
B226	I	3	B276	I	5	B326	VI	23	B376	Use B180	
B227	II	12	B277	I	5	B327	Use B326		B377	MD	
B228	Use B92		B278	MD		B328	II	8	B378	Use B-46	
B229	II	8	B279	MD		B329	Use B169		B379	Use B-242	
B230	MD		B280	I	1	B330	IV	17	B380	II	10
B231	MD		B281	II	7	B331	Use B209		B381	MD	
B232	I	1	B282	Use B211		B332	Use B1006		B382	Use B-70	
B233	MD		B283	VI	23	B333	I	1	B383	I	2
B234	II	8	B284	II	14	B334	Use B456		B384	VI	23
B235	MD		B285	Use B98		B335	I	4	B385	Use B23	
B236	Use B169		B286	II	8	B336	I	1	B386	IV	17
B237	Use B55		B287	I	3	B337	I	3	B387	Use B349	
B238	VI	22	B288	Use B1		B338	MD		B388	Use B-17	
B239	MD		B289	Use B162		B339	MD		B389	Use B157	
B240	Use B261		B290	MD		B340	I	4	B390	I	3
B241	MD		B291	MD		B341	II	10	B391	VI	22
B242	I	3	B292	II	10	B342	I	2	B392	II	13
B243	Use B9		B293	II	13	B343	IV	18	B393	IV	18
B244	II	14	B294	MD		B344	IV	17	B394	Use B1023	
B245	I	2	B295	VI	22	B345	II	6	B395	Use B97	
B246	MD		B296	I	5	B346	VII	27	B396	I	1
B247	MD		B297	Use B10		B347	VII	26	B397	Use B55	
B248	VII	25	B298	Use B271		B348	I	5	B398	Use B275	
B249	II	11	B299	I	3	B349	I	1	B399	Use B1086	
B250	IV	18	B300	I	2	B350	IV	19	B400	I	1

X-75508

Code	Table No.	Page									
B401	I	1	B451	Use B570		B501	Use B361		B551	I	5
B402	Use B287		B452	I	2	B502	Use B1086		B552	VI	22
B403	Use B392		B453	Use B28		B503	II	11	B553	I	5
B404	Use B435		B454	Use B272		B504	Use B367		B554	II	12
B405	Use B421		B455	IV	17	B505	MD		B555	Use B263	
B406	Use B361		B456	IV	17	B506	MD		B556	MD	
B407	I	3	B457	II	6	B507	Use B617		B557	MD	
B408	Use B326		B458	I	2	B508	Use B245		B558	II	9
B409	Use B509		B459	I	2	B509	II	9	B559	II	9
B410	II	9	B460	MD		B510	Use B139		B560	II	9
B411	Use B33		B461	Use B1146		B511	II	12	B561	MD	
B412	I	1	B462	Use B276		B512	Use B554		B562	Cancelled	
B413	I	1	B463	IV	19	B513	Use B306		B563	I	5
B414	MD		B464	I	3	B514	VII	25	B564	MD	
B415	Use B392		B465	II	12	B515	Use B293		B565	MD	
B416	VII	24	B466	VII	26	B516	Use B265		B566	Use B-31	
B417	Use B362		B467	MD		B517	I	2	B567	VII	29
B418	II	13	B468	II	11	B518	I	2	B568	Use B365	
B419	Use B412		B469	Use B464		B519	II	10	B569	MD	
B420	I	5	B470	MD		B520	MD		B570	VI	22
B421	I	4	B471	II	11	B521	MD		B571	II	6
B422	V	21	B472	MD		B522	II	14	B572	Use B119	
B423	V	20	B473	MD		B523	Use B558		B573	2	6
B424	I	5	B474	MD		B524	MD		B574	III	16
B425	Use B1029		B475	MD		B525	I	1	B575	I	1
B426	V	21	B476	II	13	B526	II	11	B576	VI	22
B427	II	12	B477	MD		B527	MD		B577	II	7
B428	Use B202		B478	MD		B528	II	7	B578	VII	24
B429	Use B31		B479	MD		B529	MD		B579	II	8
B430	I	1	B480	MD		B530	II	8	B580	II	6
B431	VII	24	B481	MD		B531	MD		B581	VII	25
B432	II	6	B482	MD		B532	Use B361		B582	II	13
B433	Use B17		B483	MD		B533	MD		B583	MD	
B434	MD		B484	II	12	B534	MD		B584	V	20
B435	II	6	B485	Use B45		B535	VII	24	B585	MD	
B436	Use B435		B486	Use B464		B536	MD		B586	I	4
B437	I	2	B487	MD		B537	Use B1070		B587	I	3
B438	MD		B488	MD		B538	VII	26	B588	V	20
B439	Use B31		B489	II	6	B539	I	5	B589	VII	28
B440	I	2	B490	II	11	B540	MD		B590	III	16
B441	II	13	B491	VI	22	B541	MD		B591	MD	
B442	MD		B492	Use B112		B542	MD		B592	Use B456	
B443	I	4	B493	MD		B543	MD		B593	III	15
B444	Use B421		B494	Use B100		B544	MD		B594	Use B593	
B445	Use B458		B495	I	2	B545	MD		B595	III	16
B446	Use B383		B496	Use B369		B546	MD		B596	MD	
B447	MD		B497	MD		B547	I	4	B597	Use B103	
B448	IV	18	B498	MD		B548	Use B1037		B598	VII	25
B449	IV	18	B499	I	2	B549	II	10	B599	II	14
B450	I	5	B500	Use B36		B550	MD		B600	MD	

Code	Table No.	Page	Code	Table No.	Page
B601	III	15	B1000	I	5
B602	V	20	B1001	MD	
B603	IV	19	B1002	MD	
B604	Use B1154		B1003	I	5
B605	VI	22	B1004	VII	26
B606	VII	28	B1005	VII	26
B607	Use B1158		B1006	II	10
B608	VII	28	B1007	II	6
B609	I	5	B1008	MD	
B610	II	13	B1009	Use B1071	
B611	I	4	B1010	V	21
B612	MD		B1011	I	1
B613	MD		B1012	I	5
B614	II	13	B1013	I	4
B615	II	14	B1014	I	4
B616	V	20	B1015	I	3
B617	I	3	B1016	I	4
B618	II	14	B1017	IV	19
B619	I	3	B1018	VII	25
B620	II	9	B1019	I	4
B621	V	20	B1020	I	2
B622	VII	29	B1021	Use B1005	
B623	VII	29	B1022	IV	18
			B1023	IV	19
			B1024	II	9
			B1025	I	4
			B1026	I	4
			B1027	MD	
			B1028	I	4
			B1029	I	4
			B1030	I	1
			B1031	VII	24
			B1032	I	5
			B1033	Use B1028	
			B1034	I	1
			B1035	I	3
			B1036	VII	27
			B1037	I	4
			B1038	II	12
			B1039	I	3
			B1040	I	4
			B1041	II	12
			B1042	II	13
			B1043	VII	26
			B1044	VII	27
			B1045	IV	18
			B1046	II	6
			B1047	II	13
			B1048	VII	27
			B1049	VI	22

Code	Table No.	Page	Code	Table No.	Page
B1050	Use B1011		B1100	MD	
B1051	Use B1084		B1101	I	5
B1052	I	5	B1102	MD	
B1053	I	1	B1103	II	9
B1054	Use B1077		B1104	II	12
B1055	II	6	B1105	I	1
B1056	I	2	B1106	V	21
B1057	I	1	B1107	V	20
B1058	I	3	B1108	MD	
B1059	V	20	B1109	VII	27
B1060	IV	19	B1110	I	1
B1061	II	13	B1111	I	2
B1062	III	15	B1112	I	1
B1063	III	15	B1113	VII	27
B1064	II	14	B1114	I	3
B1065	II	11	B1115	VII	25
B1066	II	11	B1116	Use B1015	
B1067	II	9	B1117	I	2
B1068	VII	24	B1118	II	6
B1069	Use B1077		B1119	II	9
B1070	II	12	B1120	VII	28
B1071	I	2	B1121	II	9
B1072	IV	18	B1122	II	6
B1073	II	8	B1123	VII	27
B1074	I	4	B1124	MD	
B1075	II	10	B1125	II	11
B1076	IV	18	B1126	I	4
B1077	III	15	B1127	II	8
B1078	MD		B1128	VII	26
B1079	III	16	B1129	VII	28
B1080	I	4	B1130	II	8
B1081	II	10	B1131	I	1
B1082	IV	18	B1132	VII	25
B1083	I	2	B1133	II	6
B1084	II	12	B1134	VI	22
B1085	II	9	B1135	I	4
B1086	II	11	B1136	I	3
B1087	I	3	B1137	MD	
B1088	VII	24	B1138	VII	24
B1089	IV	18	B1139	I	2
B1090	I	5	B1140	I	1
B1091	Use B1047		B1141	II	8
B1092	VII	25	B1142	MD	
B1093	I	5	B1143	Use B275	
B1094	MD		B1144	II	10
B1095	I	5	B1145	I	5
B1096	MD		B1146	II	10
B1097	I	1	B1147	II	10
B1098	VII	24	B1148	VII	28
B1099	II	11	B1149	I	2

x-75508

<u>Code</u>	<u>Table No.</u>	<u>Page</u>
B1150	I	3
B1151	VII	28
B1152	Use B1020	
B1153	II	6
B1154	III	15
B1155	I	1
B1156	I	5
B1157	IV	18
B1158	VII	28
B1159	VII	29
B1160	VII	29
B1161	MD	
B1162	VI	23
B1163	VII	28
B1164	II	8
B1165	III	15
B1166	I	1
B1167	VII	29
B1168	II	7
B1169	II	14
B1170	VII	25
B1171	III	15
B1172	I	5
B1173	VII	27
B1174	II	11
B1175	VII	25
B1176	VII	29
B1177	VII	29
B1178	VII	29
B1179	II	11
B1180	II	8
B1181	VII	24
B1182	VII	29
B1183	II	14
B1184	I	1

x-75508

G TYPE RELAYS

Codes Listed in Table VIII

X-75508

<u>Code</u>	<u>Wdg. Arr.</u>	<u>Page</u>	<u>Code</u>	<u>Wdg. Arr.</u>	<u>Page</u>	<u>Code</u>	<u>Wdg. Arr.</u>	<u>Page</u>
G1	2	31	G51	2	32	G101	33	35
G2	2	32	G52	2	34	G102	1	30
G3	use G1		G53	2	32	G103	1	30
G4	use G1		G54	MD		G104	1	30
G5	1	30	G55	2	35	G105	2	31
G6	use G17		G56	2	33	G106	33	36
G7	2	33	G57	use G9		G107	MD	
G8	2	32	G58	2	32	G108	3	35
G9	2	33	G59	use G27		G109	2	31
G10	1	30	G60	use G51		G110	2	31
G11	1	30	G61	use G38		G111	MD	
G12	use G27		G62	use G51		G112	10	35
G13	use G23		G63	2	34	G113	39	36
G14	use G51		G64	use G47		G115		Special
G15	1	30	G65	MD				
G16	2	32	G66	MD				
G17	1	30	G67	MD				
G18	use G27		G68	2	34			
G19	use G22		G69	2	34			
G20	2	32	G70	2	35			
G21	1	30	G71	use G79				
G22	2	33	G72	MD				
G23	2	33	G73	2	33			
G24	1	30	G74	use G10				
G25	use G11		G75	1	30			
G26	1	30	G76	2	33			
G27	2	33	G77	2	33			
G28	1	30	G78	2	34			
G29	2	33	G79	2	32			
G30	1	30	G80	2	31			
G31	1	30	G81	use G80				
G32	1	30	G82	use G80				
G33	use G26		G83	use G88				
G34	MD		G84	3	35			
G35	use G7		G85	use G88				
G36	2	31	G86	3	35			
G37	use G51		G87	2	31			
G38	2	33	G88	2	31			
G39	1	30	G89	2	34			
G40	MD		G90	2	31			
G41	2	32	G91	3	35			
G42	use G72		G92	6	35			
G43	2	32	G93	3	35			
G44	use G67		G94	1	30			
G45	2	32	G95	28	35			
G46	2	33	G96	2	31			
G47	1	30	G97	2	31			
G48	5	35	G98	2	31			
G49	2	32	G99	6	35			
G50	1	30	G100	3	35			

SECTION III
CODE INFORMATION TABLES

B TYPE RELAYS

TABLE I - (WINDING ARRANGEMENT NO. 1)

Contacts	Spring Comb.	Codes	Winding		Cont. Metal	Arm. Trvl.	Current Flow Regts.				See Note
			Turns	Res.			Soak	O.	N.O.	Rel.	
M	6	B1110	338	.3	H2	30	-	54	-	26.5	(RB)
M-M	7	B430	338	.3	S2	35	-	125	-	23	(RB)
M	1	B9	400	.42	H2	30	-	58	-	16	(RB)
B	2	B266	400	.42	S2	30	500	64	-	6	(RB)
BM	3	B153	400	.42	S2	30	400	55	-	17	L, (RB)
M	1	B401	630	1.05	H2	30	-	37	-	10	(RA)
M	1	B1131(P)	630	1.05	S2	30	-	23.5	-	9.2	(RA)
M-M	7	B1053	630	1.05	H2	35	-	42	-	19	(RA)
M	1	B10	840	1.7	H2	30	150	22	-	7.3	(RA)
M	1	B1011	840	1.7	S2	30	-	19	-	7	(RA)
M	6	B333	840	1.7	S2	30	-	40	24	-	(RA)
MM	5	B151	840	1.7	S2	40	-	49	-	10	(RA)
M-M	7	B400	840	1.7	S2	35	-	49	-	9	(RA)
BM	3	B78 (P)	840	1.7	S2	30	-	27	-	9	(RA)
M-B	9	B1184	840	1.7	H2	30	150	20	-	3.5	A, (RA)
M	1	B396	1010	2.5	S2	30	-	23	-	6	
M	1	B1097	1010	2.5	H2	30	125	16	-	5.9	A
B	12	B575	1010	2.5	S2	50	-	85	-	48	
BM	3	B349(P)	1010	2.5	S2	30	-	81	63	-	
M-M	7	B1155	1010	2.5	S2	35	125	37	27.5	-	
M-B	9	B1166	1240	3.8	H2	30	100	13	-	7.6	
M	1	B15	1300	5	S2	30	150	23	-	8	B
M	1	B36	1300	5	S2	30	150	17	-	5	
B	2	B33	1300	5	S2	30	150	23	-	9	B
BM	3	B28(P)	1300	5	S2	30	300	23	-	9	B
MM	5	B1034	1300	5	S2	30	-	16	-	4	
M	6	B412	1300	5	H2	30	150	23	-	9	B
M	6	B1057(P)	1300	5	H2	30	-	14	-	4	
M-M	7	B162	1300	5	H2	35	-	32	-	7	
MM	5	B1112	1100	5.3	H2	40	-	21	-	9.7	C
BM	3	B1030	1540	6	S2	30	175	15	-	6.5	B
M	1	B76	1580	6.5	S2	30	150	17	-	5	B
M	6	B413	1580	6.5	S2	30	150	13	-	3.8	B
B	2	B200	1580	6.5	S2	30	300	15	-	5	B
BM	3	B268(P)	1580	6.5	S2	30	150	18	-	6	B
MM	5	B280	1580	6.5	S2	40	500	24	-	3	
M	1	B232	1290	8	S2	30	-	18	-	6	C
M	1	B211	1660	8	H2	30	-	14	-	4.6	
B	2	B5	1660	8	S2	30	300	15	-	4.6	
M	6	B367	1815	9	H2	30	130	16	-	6.5	
M-M	7	B336	1815	9	S2	35	350	21	-	4	
BM	3	B525(P)	1900	9	S2	30	175	13.7	7.2	5	
M	6	B1105	2200	11.5	S2	30	115	8.1	-	4.7	
BM	3	B1140(P)	2200	11.5	S2	60	60	39	-	23.5	

X-75508

NOTES: A. - No stop pins. (P). - Preferred Codes.
 B. - Crosstalk cover. (RA). - Winding resistance $\pm 10\%$.
 C. - 6 layers BTC next to core. (RB). - Winding resistance $\pm 15\%$.
 L. - A & M Only

B TYPE RELAYS

TABLE I - (WINDING ARRANGEMENT NO. 1)

Contacts	Spring Comb.	Codes	Winding		Cont. Metal	Arm. Trvl.	Current Flow Repts.				See Note
			Turns	Res.			Soak	O.	N.O.	Rel.	
M	6	B1110	338	.3	H2	30	-	54	-	26.5	(RB)
M-M	7	B430	338	.3	S2	35	-	125	-	23	(RB)
M	1	B9	400	.42	H2	30	-	58	-	16	(RB)
B	2	B266	400	.42	S2	30	500	64	-	6	(RB)
BM	3	B153	400	.42	S2	30	400	55	-	17	L, (RB)
M	1	B401	630	1.05	H2	30	-	37	-	10	(RA)
M	1	B1131(P)	630	1.05	S2	30	-	23.5	-	9.2	(RA)
M-M	7	B1053	630	1.05	H2	35	-	42	-	19	(RA)
M	1	B10	840	1.7	H2	30	150	22	-	7.3	(RA)
M	1	B1011	840	1.7	S2	30	-	19	-	7	(RA)
M	6	B333	840	1.7	S2	30	-	40	24	-	(RA)
MM	5	B151	840	1.7	S2	40	-	49	-	10	(RA)
M-M	7	B400	840	1.7	S2	35	-	49	-	9	(RA)
BM	3	B78 (P)	840	1.7	S2	30	-	27	-	9	(RA)
M-B	9	B1184	840	1.7	H2	30	150	20	-	3.5	A, (RA)
M	1	B396	1010	2.5	S2	30	-	23	-	6	
M	1	B1097	1010	2.5	H2	30	125	16	-	5.9	A
B	12	B575	1010	2.5	S2	50	-	85	-	48	
BM	3	B349(P)	1010	2.5	S2	30	-	81	63	-	
M-M	7	B1155	1010	2.5	S2	35	125	37	27.5	-	
M-B	9	B1166	1240	3.8	H2	30	100	13	-	7.6	
M	1	B15	1300	5	S2	30	150	23	-	8	B
M	1	B36	1300	5	S2	30	150	17	-	5	
B	2	B33	1300	5	S2	30	150	23	-	9	B
BM	3	B28(P)	1300	5	S2	30	300	23	-	9	B
MM	5	B1034	1300	5	S2	30	-	16	-	4	
M	6	B412	1300	5	H2	30	150	23	-	9	B
M	6	B1057(P)	1300	5	H2	30	-	14	-	4	
M-M	7	B162	1300	5	H2	35	-	32	-	7	
MM	5	B1112	1100	5.3	H2	40	-	21	-	9.7	C
BM	3	B1030	1540	6	S2	30	175	15	-	6.5	B
M	1	B76	1580	6.5	S2	30	150	17	-	5	B
M	6	B413	1580	6.5	S2	30	150	13	-	3.8	B
B	2	B200	1580	6.5	S2	30	300	15	-	5	B
BM	3	B268(P)	1580	6.5	S2	30	150	18	-	6	B
MM	5	B280	1580	6.5	S2	40	500	24	-	3	
M	1	B232	1290	8	S2	30	-	18	-	6	C
M	1	B211	1660	8	H2	30	-	14	-	4.6	
B	2	B5	1660	8	S2	30	300	15	-	4.6	
M	6	B367	1815	9	H2	30	130	16	-	6.5	
M-M	7	B336	1815	9	S2	35	350	21	-	4	
BM	3	B525(P)	1900	9	S2	30	175	13.7	7.2	5	
M	6	B1105	2200	11.5	S2	30	115	8.1	-	4.7	
BM	3	B1140(P)	2200	11.5	S2	60	60	39	-	23.5	

X-75508

NOTES: A. - No stop pins.
 B. - Crosstalk cover.
 C. - 6 layers BTC next to core.
 L. - A & M Only

(P). - Preferred Codes.
 (RA). - Winding resistance ±10%.
 (RB). - Winding resistance ±15%.

B TYPE RELAYS (Contd.)

TABLE I - (WINDING ARRANGEMENT NO. 1)

Contacts	Spring Comb.	Codes	Windings		Cont. Metal	Arm. Trvl.	Current Flow Rects.				See Note
			Turns	Res.			Soak	O.	N.O.	Rel.	
M	1	B148	2600	17	S2	30	-	8.9	-	3.1	
BM	3	B65(P)	2600	17	S2	30	-	9	-	3	
BM	3	B128	2600	17	S2	30	-	32	-	18	D
M-B	4	B8	2600	17	S2	30	-	10	-	4	
M	6	B362	2600	17	S2	30	-	15.8	11	-	
M	6	B342	2690	20	S2	30	-	8.6	-	2	
B	2	B149	2690	20	S2	50	-	40	-	24	
BM	3	B313	2690	20	S2	50	-	37	30	-	
BM	8	B1117(P)	2690	20	S2	30	47	7.5	-	4.5	
BM	14	B1149	2690	20	S2	40	150	11.9	-	7.7	B,(RA)
B	2	B452	1450	22	S2	60	-	80	60	-	
M	1	B70	3520	34	H2	30	-	8	-	3	
M	6	B245	3520	34	S2	30	-	8	-	3	
M-M	7	B119	3520	34	S2	35	-	12	-	4	
BM	3	B203(P)	3520	34	S2	30	-	6.5	-	2	
M-B	4	B440	3520	34	S2	30	-	9	5.2	-	
M	1	B43	3630	36	S2	30	14	6	-	2.5	
M	6	B458	3970	40	S2	30	-	5.9	-	1.5	
M-M	7	B437	1197	40	S2	35	-	59	44.5	-	
M	1	B21	4160	50	S2	30	-	5.5	-	1.8	
M	6	B459	4160	50	S2	30	-	5.6	-	1.4	
M	6	B1111	4160	50	S2	30	-	6	4.4	-	
B	2	B85	4160	50	S2	30	-	6	-	2	
BM	3	B64(P)	4160	50	S2	30	-	5.5	-	1.8	
M-B	4	B495	4160	50	S2	30	-	5.6	-	1.5	
M-M	7	B265	4160	50	S2	35	-	10	-	2	
M-M	7	B1071(P)	4160	50	S2	30	-	5	-	1.2	
M	1	B260	4375	60	S2	30	-	6	-	1	
BM	14	B1139(P)	4375	60	S2	30	-	4.2	-	1.9	
BM	3	B1056	5100	67	S2	30	-	4.1	-	1.8	
M	1	B517	5260	84	S2	30	-	5	-	1.2	
M	1	B518	1310	85	S2	50	96	80	-	47	
M-M	7	B1020	1440	85	H2	60	100	80	-	47	E
M	6	B499	5375	87	S2	30	-	4.3	-	1.1	
M	1	B374	5180	93	S2	30	-	4.5	-	1.1	
BM	3	B22	5350	96	S2	40	-	16	12	-	
M	1	B124	955	100	S2	50	-	78	47	-	
M	1	B202	5650	100	S2	50	-	15	-	8	
M	6	B383	5650	100	S2	30	23	7.2	-	3.2	
B	2	B126	5650	100	S2	50	-	18	14	-	
BM	3	B300(P)	5650	100	H2	30	-	5.6	3.2	-	
M-M	7	B1083	5650	100	S2	35	-	4.7	-	1.8	

X-75508

NOTES: B. - Crosstalk cover. (P). - Preferred codes.
 D. - .020" stop pins. (RA). - Winding resistance $\pm 10\%$.
 E. - 8 layers BTC next to core.

B TYPE RELAYS (Contd.)

TABLE I - (WINDING ARRANGEMENT NO. 1)

<u>Contacts</u>	<u>Spring Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Repts.</u>				<u>See Note</u>
			<u>Turns</u>	<u>Res.</u>			<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>	
M	1	B18	6200	120	S2	30	-	3.6	-	1.2	
M	1	B1058(P)	6200	120	S2	30	-	3	-	1.2	
M-B	9	B617	6200	120	S2	40	-	5.5	-	1.5	
M	1	B83	6970	140	S2	30	-	5	-	2.8	
M	6	B263	6970	140	H2	30	-	3.3	-	.8	
BM	3	B103(P)	6970	140	S2	30	-	5.4	4.3	-	
BM	3	B1015	6120	165	S2	40	175	4.9	-	2.9	
M	1	B390	3225	175	S2	50	39	34	-	20	
BM	11	B1136	7500	190	S2	30	17	4	-	2.1	
M	1	B242	8170	200	H2	40	43	7.1	-	3.5	
M	6	B464(P)	7750	200	H2	30	115	3.4	-	1.5	
B	2	B121	7500	200	S2	30	-	4.5	-	2	
M-M	7	B587	8170	200	S2	50	16	9.4	-	3.9	
BM	3	B46	8450	220	S2	30	-	2.8	-	.9	
M-M	7	B37	8450	220	S2	35	-	6	4.8	-	
M	1	B26	8400	250	S2	30	-	2.7	-	.9	
M	6	B122	8400	250	S2	30	-	3	-	1	
BM	3	B67(P)	8400	250	S2	30	-	6	-	3	
BM	11	B337	8400	250	S2	50	76	7.2	-	3.4	
M	6	B287	9250	275	H2	30	-	3.7	-	1.4	B
B	2	B322	9250	275	H2	30	-	2.8	-	.7	
M	1	B299	9750	300	S2	30	100	2.5	-	.8	
BM	8	B1114(P)	9750	300	H2	30	13	1.7	-	1.1	
M	1	B226	8200	400	S2	40	-	11	9	-	C
M	1	B186	11000	400	S2	50	-	9.4	7.9	-	
BM	3	B619	11000	400	S2	50	-	11	-	6.5	
BM	3	B1087(P)	11000	400	S2	40	-	3.6	-	2.1	
M	1	B17	12300	500	S2	30	-	1.8	-	.6	
M	1	B75	12300	500	S2	30	-	5	-	2.5	D
M	6	B31	12300	500	S2	30	-	1.8	-	.6	
M	6	B407	12300	500	S2	30	-	4.4	2.4	-	D
M	6	B1039(P)	12300	500	S2	50	85	8.6	-	5.1	
B	2	B112	12300	500	S2	30	-	1.8	-	.6	
BM	3	B171(P)	12300	500	S2	30	-	2	-	.6	
BM	8	B60	12300	500	S2	30	-	2.1	-	.7	
BM	11	B1150	12300	500	S2	30	10	2.3	-	1.2	
M-M	7	B368	7970	500	S2	50	16	11.6	-	5.6	
M-M	7	B1035	12300	500	S2	35	-	2.1	-	.8	

X-75508

NOTES:- B - Crosstalk cover. (P) Preferred Codes.
 C - 6 layers BTC next to core.
 D - .020" stop pins.

B TYPE RELAYS (Contd.)

TABLE I - (WINDING ARRANGEMENT NO. 1)

Contacts	Spring Comb.	Codes	Winding		Cont. Metal	Arm. Trvl.	Current Flow Repts.				See Note
			Turns	Res.			Soak	O.	N.O.	Rel.	
M-B	9	B1126	13800	560	H2	30	10	1.2	-	.6	(RC)
M-B	9	B1135	13200	560	H2	30	9.5	1.2	-	.7	
M-M	7	B1029	13350	600	S2	35	-	2	-	.7	
M-M	7	B586	14000	725	S2	60	-	9.2	-	4.9	
M	1	B157	15700	800	S2	30	-	1.5	-	.3	
BM	3	B222(P)	15700	800	S2	50	-	6.4	-	3.7	
BM	3	B315	5600	800	S2	50	47	15	-	8.3	
BM	3	B1014(P)	5600	800	S2	50	70	8.9	-	5.3	
M	6	B353	2255	800	S2	50	-	44	33	-	
M	1	B160	16900	1000	S2	30	21	1.3	-	.4	
M	6	B66	16900	1000	S2	30	-	1.5	-	.5	
M	6	B1040	16900	1000	S2	50	-	2.9	-	1.7	
B	2	B369	16900	1000	H2	30	-	1.4	-	.3	
BM	3	B97(P)	16900	1000	S2	40	-	4	-	2.6	
BM	11	B1016	16900	1000	S2	30	-	1.5	1	-	
MM	5	B25	16900	1000	S2	40	-	2	-	.7	
M-M	7	B98	16900	1000	S2	35	-	4	-	2.5	
M	1	B6	17560	1400	S2	30	21	1.3	-	.4	
BM	3	B215(P)	17560	1400	S2	30	21	1.3	-	.4	
M	1	B1080	20200	1500	S2	30	-	.8	-	.3	
M	6	B547	20200	1500	S2	30	-	1.2	-	.3	
M	6	B1013	20200	1500	S2	30	-	.8	-	.2	
BM	3	B68(P)	20200	1500	S2	30	-	1.2	-	.4	
M	6	B91	21200	1600	S2	30	-	1	-	3	
M	1	B56	22700	1800	S2	30	-	1	-	.3	
M	6	B335	22700	1800	S2	30	10	2.5	1.9	1.1	
M	6	B1019	22700	1800	S2	30	-	.9	-	.3	
B	2	B47	22700	1800	S2	30	-	1	-	.3	
BM	8	B1026(P)	22700	1800	S2	30	-	.9	-	.3	
M-B	4	B1074	22700	1800	S2	30	-	.9	-	.3	
M-M	7	B1025	22700	1800	S2	30	-	1	-	.4	
M	1	B167	24400	2000	H2	30	3	2.1	1.6	-	
M	6	B421	24400	2000	H2	30	-	1	-	.2	
BM	3	B443(P)	24400	2000	H2	30	-	1	-	.2	
BM	11	B1037	24400	2000	H2	30	-	.9	-	.4	
M-M	7	B611	24400	2000	H2	35	6.7	1.9	-	.6	
M	1	B1028	26700	2000	H2	30	-	.6	-	.2	A
M	1	B320	21850	2300	S2	30	-	1.1	-	.3	
M	6	B340	12970	2500	S2	30	-	1.8	-	.4	E
M	1	B24	27400	2800	S2	30	-	.8	-	.3	
M	6	B86	27400	2800	S2	30	-	.8	-	.3	
BM	3	B189(P)	27400	2800	S2	30	-	.9	-	.3	

X-75508

NOTES: (RC) - Winding resistance $\pm 2\%$. (P) Preferred Codes.
 A - No stop pins.
 E - 8 layers BTC next core.

B TYPE RELAYS (Contd.)

TABLE I - (WINDING ARRANGEMENT NO. 1)

Contacts	Spring Comb.	Codes	Winding		Cont. Metal	Arm. Trvl.	Current Flow Repts.				See Note
			Turns	Res.			Soak	O.	N.O.	Rel.	
M	1	B323(P)	23180	4000	S2	30	-	1	-	.2	
M	6	B539	26220	4000	S2	30	-	.9	-	.2	
M-M	7	B563	31525	5000	H2	35	-	1.3	-	.2	
BM	14	B1156	38000	5000	S2	30	-	.5	-	.2	
BM	3	B277	21720	5200	S2	30	-	1.1	-	.2	
M-M	7	B305	21720	5200	S2	35	-	2.6	-	1	
BM	11	B1090	26200	5200	S2	30	-	.7	-	.2	
M	1	B1052	13790	5500	H2	60	6	3.8	-	2.3	
M	1	B276	22050	6000	S2	30	-	1.1	-	.2	
M	6	B358 (P)	22050	6000	S2	30	-	1.2	-	.4	
B	12	B553	25000	6000	S2	30	-	1.7	-	.7	
M	13	B1101	27600	8500	S2	40	4.4	1	.8	.5	F
M	6	B1000	26308	10000	H2	50	4.8	1.7	-	1	
M-M	7	B551	38900	10000	H2	35	-	1.1	-	.2	
B	12	B450	26300	10000	S2	30	-	1.7	-	.7	L
M	1	B34	23980	12000	S2	30	-	1	-	.3	
M	6	B209	23980	12000	S2	50	-	2.7	-	1.3	
B	2	B296	23980	12000	S2	50	-	2.9	-	1.5	
BM	8	B147(P)	23980	12000	S2	30	-	1	-	.3	
MM	5	B301	23980	12000	S2	40	-	2.9	2.2	-	
M-M	7	B133	23980	12000	S2	35	-	1.7	-	.4	
M-B	4	B181	23980	12000	S2	30	-	1	-	.3	
M	1	B139	34710	12000	S2	30	-	.7	-	.2	
M	1	B1003	32040	13000	S2	30	-	.5	-	0.C.	
BM	14	B1172	37540	13000	S2	30	-	1.1	.8	-	
M	6	B348	34600	15000	S2	30	-	.7	-	.2	
M	1	B135	23300	20000	S2	30	-	1	-	.3	
M	6	B420	23300	20000	H2	30	-	1.1	-	.3	
M	1	B1032	38700	20000	S2	30	-	1.2	-	.7	
M	13	B1093	38700	20000	S2	40	-	.8	-	.4	
MM	5	B609	38700	20000	S2	40	-	1.2	-	.3	
M	6	B424(P)	38520	29700	H2	30	-	.6	-	.1	
B	2	B1095	38520	29700	S2	30	-	.9	.7	-	
M	6	B1012	25675	29700	H2	30	-	.6	-	.1	
BM	3	B1145	37370	38500	S2	50	2.4	1.1	-	.7	

X-75508

NOTES: R - 4 layers BTC next to core.
L - A & M Only.

(P) Preferred Codes.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.				ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER	NON- OPR.	RLS		
M	1	B-38	P-264 S2000	.2 250	S2		P-85. Sec. 13		28.	30	C, (RB)
M-B	4	B-432	P-264 S-2000	.2 250	S2		P-88. P/S11.2		23.	30	M
M	6	B-345	P-445 S-2000	.5 250	S2		P-52. S-13.		13.	30	(RB)
M	10	B-457	P-445 S-2000	.5 250	S2		P-52. P/S10.3		13.8	30	M, (RB)
M-M	7	B-1055	P-445 S-1900	.5 250	H2		P-46. P/S9.5		14.	30	A, (RB) M
M	6	B-573	P-380 S-11500	.5 1300	H2		P-61. S2.3		16.	30	L, (RB)
M	1	B-1007	P-795 S-3200	1.7 400	H2		P-23 S-7.1		9.	30	
M	1	B-1046	P-770 S-680	2. 3.	S2		P-47 P/S26.5	35.	13.	30	M, (RB)
M	1	B-580	P-880 S-2740	2. 1400	H2		P26.5 S-9.4		7.3	30	
M-M	7	B-489	P-880 S-2740	2 1400	H2		P47. P/S13.		8.6	35	M
BM	8	B-1133	P-1000 S-3320	2.7 1800	S2		P19.5 P/S4.9		10.6	30	M
M	1	B-1118	P-1040 S-400	2.9 31	S2	120	P16. S46		8.6	30	
BM	8	B-1153	P-1120 S-2630	3.8 1650	S2	115.	P-17. S7.3		9.8	30	(RA)
M	1	B-159	P-920 S940	5 5	S2	P/S.3 Sec	23 48		9	30	J, M
M	6	B-435	P-920 S-940	5 5	H2	68.	P/S14.8 P34		5.7	30	J, M
M-M	7	B-571	P-920 S-940	5 5	H2	68.	P/S21.		4.3	35	B, M
BM	14	B-1122	P-1180 S-4225	5 145	S2		S-7.1 P-28	5.2		40	

X-75508

- NOTES: A. No stop pins.
 B. Crosstalk cover.
 C. 6 layers BTC next to core.
 J. Equipped with separators.
 (RA) Winding resistance $\pm 10\%$.
 (RB) Winding resistance $+15\%$.
- L. A & M Only.
 M. P/S indicates primary and secondary windings in series aiding.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.				ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER	NON- OPR.	RLS		
M	6	B-577	P-935 S-6475	5 250	S2	150	P-28.5 S-4.6		10.	30	B
M	1	B-120	P-1160 S-6050	5 400	S1		P/S3.1 P21.		1.	30	M
BM	14	B-1168	P-1180 S-17760	5 20000	S2		P-26. S-1.9	19.5		40	(RC)
M	6	B-191	P-995 S-995	5.25 4.8	S2		P-23.5 S23.5		6. 6.	30	(RA)
M	1	B-528	P-1350 S-1800	6.5 245	S2	95.	P-15.5 S-12.8		4.5 3.	30	B,G
M	1	B-208	P-1550 S-1900	7 250	S2		P-15. S-14.		5.	30	B
BM	3	B-164	P-1550 S-1900	7 250	S2	280.	P-15 S-14		5.	30	L,B
M	1	B-302	P-1375 S-1360	10 10	H2	50	P/S14.7	10.	6.6	30	M
B	2	B-256	P-1375 S-1360	10 10	H2	50	P/S14.7	10	6.6	30	M
BM	3	B-57(P)	P-1375 S-1360	10 10	S2		P/S-8.5		4.	30	M
M-B	4	B-13	P-1030 S-9200	10 400	S2		P-25. S-3.		11.	30	
M	6	B-370	P-1930 S-3400	10 500	S2		P-48. S-28.	38.		40	L,(RA)
M-M	7	B-176	P-1900 S-1160	10 500	S2		S-36. P-25		8.	35	
BM	3	B-281	P-900 S-11400	10 600	S2		P-26. S-2.3		6.8	30	B
M-M	7	B-172	P-1860 S-4385	10 1500	S2		P-22. S-11.		4.	35	
BM	8	B-39	P-2160 S-4270	15 550	S2		P-12 S-6.7		4.	30	
M	1	B-102	P-2600 S-250	19 10	S2		S-140 P-15.		90.0	30	

X-75508

NOTES: B. Crosstalk cover.
 G. 2 layers BTC next to core.
 (RA) Winding resistance $\pm 10\%$

(RC) Winding resistance $\pm 2\%$.
 L. A & M Only.
 M. P/S indicates primary and secondary
 windings in series aiding.
 (P) Preferred code.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.				ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER	NON-OPR.	RLS		
M	6	B-328	P-1980 S-4195	20 1000	S2		P-12. S- 7.		3.	30	F,L
M	1	B-286	P-2050 S-13310	20 12000	H2		P/S-3.1 P-25.		1.3	30	L,M
M	1	B-90	P-2660 S-3300	22 400	S2		P/S-4.		1.	30	M
B	2	B-234	P-1700 S-10330	24 12000	S2		P-14. S-2.6		3.0	30	F
BM	3	B-307	P-1700 S-10330	24 12000	H2		P-22 P/S-2.8		6.5 1.	30	F,L,M
M-M	7	B-1141	P-1420 S-1420	25 170	H2	90.	P-20. S-20	14.4	12.	35	E,(RA)
M	1	B-257	P-2660 S-7000	25 800	S2		P-25. S-11.	18.		30	
BM	14	B-1164	P-1900 S-28000	25 4450	S2		P-9.5 S-.7 P/S-.7		4.7	30	M
M	6	B-105	P-2000 S-15280	27 5000	S2		S-1.5 P-13.		.5	30	
M	6	B-579	P-2300 S-21805	27 12000	S2		P/S-1. P-11.5		.2	30	B,J,M
BM	3	B-1180	P-3240 S-4620	29 800	H2	50	P/S-3.1		2.	40	M
M	6	B-1073	P-2300 S-8300	32 400	S2	12.	P/S-1.5		OC	30	A,M
M	1	B-229	P-1800 S-9150	34 400	S2		P/S-2.1 P-13		.5	30	M
BM	11	B-530	P-2620 S-11105	34 5000	S2		P/S-3.2 P-18.5	2.4		30	M G
M	1	B-273	P-3900 S-5720	50 1000	S2		P-8.3 S-6.3	3.		30	
BM	14	B-1130	P-4100 S-6400	54 645	H2	19.	P/S-2.9		1.5	30	L,M
BM	14	B-1127	P-1710 S-1710	57 49	H2	73.	P-20. S-20	14.6	12.5	40	E,(RA)

X-75508

- NOTES: A. No stop pins.
 B. Crosstalk cover.
 E. 8 layers BTC next to core.
 J. Equipped with separators.
 G. 2 layers BTC next to core.
- (RA) Winding Resistance $\pm 10\%$.
 F. 4 layers BTC next to core.
 L. A & M Only.
 M. P/S indicates primary and secondary windings in series aiding.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>			<u>ARM TRVL.</u>	<u>SEE NOTE</u>
			<u>TURNS</u>	<u>RES.</u>		<u>SOAK</u>	<u>OPER</u>	<u>NON-OPR. RLS</u>		
BM	3	B-620	P-3300 S-3300	60 60	H2		P-7 S-7.	1.	30	(RA)
M-B	4	B-40	P-2650 S-8500	60 400	H2		P-9. S-3.	3.	30	
M	1	B-74	P-2860 S-2730	75 75	S2		P-9 S-8.5	S-2.5	30	
BM	3	B-509	P-1680 S-1560	75 75	S2	80.	S-13.5 P/S-6.9	3.8	30	E,L M
BM	8	B-77	P-2860 S-2730	75 75	S2		S-12. P-13.	6.	30	
M	6	B-1067	P-2860 S-2730	75 75	H2	50	P/S-6.4	3.8	50	B,M
BM	14	B-1121	P-4950 S-8230	80 1655	S2		P-3.7 S-2.5	1.9	30	
M	6	B-1103	P-4950 S-8240	80 1700	S2		P-3.7 S-2.5	1.9	30	
M-B	4	B-1085	P-2300 S-20000	85 1800	H2		S-.9 P/S6.6	.3	30	M
M-M	7	B-1024	P-2300 S-20000	85 1800	S2		S-1.2 P-11.	.5	35	A
BM	14	B-1119 (P)	P-2300 S-20000	85 1800	S2		S-.9 P/S-6.8	.4	30	M
M	1	B-199	P-2300 S-20000	85 1800	S2		S-1.2 P-11.	.4	30	
B	2	B-559	P-2300 S-20000	85 1800	S2		S-1.7 P-16.5	.5	30	
M-B	4	B-558	P-2300 S-20000	85 1800	H2		S-1.2 P/S-8.3	.3	30	M
BM	3	B-410	P-2300 S-20000	85 1800	S2		S-1.2 P-11.	.3	30	
M	6	B-560	P-2300 S-20000	85 1800	S2		S-1.2 P-11.	.3	30	

x-75508

NOTES: A. No stop pins.
 B. Crosstalk cover.
 E. 8 layers BTC next to core.
 (RA). Winding resistance $\pm 10\%$.
 L. A & M Only.
 (P) Preferred Code.
 M. P/S indicates primary and secondary windings in series aiding.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.				ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER	NON- OPR.	RLS		
MM	5	B-1144	P-5280 S-7300	85 1800	S2	24.	P-4.4 S-3.5	2.6 1.7		40	(RA)
M-B	9	B-1147	P-5280 S-7300	85 1800	H2		S-4.5 P-6.3	2.2		30	(RA)
M	13	B-1081	P-5280 S-7300	85 1800	S2		S-3.6 P-5.	2.6 2.		35	(RA)
M	6	B-549	P-2300 S-22185	85 10000	S2		P/S-1. P-12.	.2		30	M
M	1	B-201	P-2300 S-19550	85 12000	S2		P-9.7 S-1.3	3.3		30	
BM	3	B-380 (P)	P-2300 S-19550	85 12000	S2		P/S-1.1 P-11.	.2		30	B,M
M-B	4	B-519	P-2300 S-19550	85 12000	S2		P-13.2 P/S-1.6	4.7		30	M
BM	3	B-1146	P-3760 S-25175	85 12000	H2		P/S-.8 P-6.6	.4		30	L,M
M	6	B-1075	P-1530 S-34160	85 20000	S2		P/S-.5 P-12.8	.1		30	M
M	1	B-271	P-4280 S-4050	100 100	S2	65.	P/S-6.7	3.2		40	B,M
B	2	B-318	P-4280 S-4050	100 100	S2	45.	P/S-10.8	6.6		50	M
M	6	B-341	P-4280 S-4050	100 100	S2	45.	P/S-10.8	6.2		50	M
BM	8	B-359	P-4280 S-4050	100 100	S2	15.	P/S-3.1	1.1		30	L,M
M	10	B-324	P-3600 S-14900	100 1400	H2		P-21. P/S-4.5	16.		50	M
M	1	B-258	P-3600 S-14900	100 1400	H2		P/S-1.5 P-7.	1.		30	M
M	1	B-292	P-4300 S-13900	100 10000	H2		P/S-3.1 P-15.	1.4		40	M
M	6	B-1006	P-4300 S-16480	100 12000	H2		P/S-1.2 P-6.3	.9 .6		30	M

X-75508

NOTES: B. Crosstalk cover.
(RA) Winding resistance $\pm 10\%$.
L. A & M Only.

M. P/S indicates primary and secondary windings in series aiding.
(P) Preferred Code.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.				ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER	NON- OPR.	RLS		
BM	3	B-168	P-3200 S-9400	105 950	S2		P-21. S-8.	13. 4.1		40	L
M	6	B-1065	P-3225 S-31000	125 4700	S2		P/S-.5	.1		30	M
M-M	7	B-526	P-4530 S-4530	170 170	S2	14.	P/S-10.4	7. 5.1		50	M
BM	11	B-1125	P-4000 S-4000	190 255	H2	32.	P-6.7 S-6.7	5. 3.8		30	C, (RA)
M	1	B-169	P-5420 S-5430	200 200	S1		P/S-5.9	2.9		50	M
B	2	B-175	P-5420 S-5430	200 200	S2		P/S-2.6	1.4		30	M
BM	3	B-55 (P)	P-5420 S-5430	200 200	H2		P-4.6 P/S-2.6	1.4		30	J, M
M-M	7	B-503	P-5420 S-5430	200 200	S2	12	P/S-3.9	1.1		35	M
M	6	B-1086	P-5550 S-5400	200 200	S2	42.	P/S-2.2	1.3		30	M
BM	8	B-1174(P)	P-5550 S-5400	200 200	H2	42.	P/S-2.2	1.6 1.4		30	M
M	6	B-325	P-5700 S-5700	200 200	S2	105. 105.	P-4.5 S-4.5	1.6 1.6		30	(RA)
M-M	7	B-249	P-5420 S-15000	200 1500	S2		P-21. S-9.	14.		60	L
M	6	B-490	P-4070 S-30250	200 12000	S2		P/S-.8 P-7.4	.2		30	M
M-M	7	B-468	P-4070 S-30250	200 12000	S2		P/S-1.2 P-11.	.2		35	M
M-M	7	B-1099	P-4800 S-28540	200 12000	S2	26	P-5.4 P/S-.9	2.4		35	M
M	13	B-1179	P-2400 S-2400	210 245	S2		P-6.6 S-6.7	2.		30	(RA) H
M	1	B-471	P-4500 S-4500	220 220	S2	90.	P/S-11.3	6.6		50	J, M
B	2	B-366	P-4500 S-4500	220 220	S2	42.	P/S-10.8	6.6		50	M
M	6	B-1066	P-4500 S-4500	220 220	H2	65.	P/S-11.5	6.9		50	B, M

x-75508

NOTES: B. Crosstalk cover.
C. 6 layers BTC next to core.
J. Equipped with separators.
(RA). Winding resistance $\pm 10\%$.

H. 14 layers BTC next to core.
L. A & M Only.
M. P/S indicates primary and secondary windings in series aiding.
(P) Preferred code.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.			ARM TRVL.	SEE NOTE
			URNS	RES.		SOAK	OPER.	NON- OPR.		
M-M	7	B-484	P-4500 S-4500	220 220	S2	95.	P/S-12.5	6.4	60	L,M
M	1	B-183	P-5000 S-3200	250 250	S2		P/S-17.	14.	60	M
M	13	B-1084	P-5040 S-4600	250 250	S2	75	P/S-3.9	2.3	35	B,G,M
M-M	7	B-1038	P-5730 S-5950	250 250	S2	17.	P/S-4.8	2.9	50	M
MM	5	B-11	P-7000 S-12800	250 3800	S2		P-4. S-2.5	1.	40	
M-M	7	B-427	P-7400 S-12762	250 3800	S2		P-5.6 S-3.6	1.	35	
M	1	B-163	P-2910 S-2160	275 275	S2	69.	P/S-7.9	3.	30	E,M
M-B	4	B-1104	P-5350 S-30150	340 12000	H2		S-.8 P-5.	.4	30	
M	6	B-465	P-4650 S-4600	350 350	S2	14.	P/S-4.5	2.	20	L,M
M-M	7	B-365	P-8300 S-12000	350 1300	H2		S-5.6 P-9.	4.2	35	
M-B	4	B-69	P-10640 S-970	400 32	S2		S-26. P/S-2.4	8.	30	M
M	1	B-227	P-9200 S-2350	400 50	S2		P/S2 S-11	.5	30	A,M
M	6	B-511	P-6800 S-6800	400 400	S2	23.	P/S-6.	3.4	50	M
BM	3	B-45	P-8000 S-7800	400 400	S2	13.	P/S-2.	.6	30	M
M	6	B-1070	P-8000 S-7800	400 400	S2	13.	P/S-2.5	1.5	40	M
M-M	7	B-210	P-8000 S-7800	400 400	H2	11.	P/S-3.	1.	35	M
M	1	B-1041	P-3900 S-3500	450 435	S2	17.	P/S-5.8	4.3 3.4	40	E,M
M-B	4	B-554	P-6800 S-6800	450 450	S2	39.	P/S-8.3	5.	50	M

x-75508

NOTES: A. No stop pins.
B. Crosstalk cover.
E. 8 layers BTC next to core.
G. 2 layers BTC next to core.

L. A & M Only.
M. P/S indicates primary and secondary windings in series aiding.

B TYPE RELAYS
TABLE II (WINDING ARRANGEMENT NO. 2)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.				ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER	NON-OPR.	RLS		
M	1	B-293	P-5550 S-5200	500 500	S2	12.	P/S-2.6		1.	30	E,M
BM	3	B-306	P-5550 S-5200	500 500	S2	19.	P/S-3.8		1.6	30	E,M
BM	3	B-1047	P-5550 S-5200	500 500	S2		P/S-1.5		.5	30	E,M
M	6	B-392 (P)	P-5550 S-5200	500 500	S2	12.	P/S-4.4		2.	30	E,J M
M	6	B-1042	P-5550 S-5200	500 500	S2	19.	P/S-2.1		1.1	30	B,E M
BM	8	B-441	P-5550 S-5200	500 500	S2	12.	P/S-4.6		2.	30	B,E M
M	1	B-259	P-11600 S-220	500 500	S2		P/S-12.		6.	60	M
BM	3	B-23	P-9300 S-7700	500 500	H2		P-2.7 S-3.7		1.	30	
MM	5	B-35	P-9450 S-7140	525 475	S2		P-4.2 S-6.1		1.4	40	
M-M	7	B-41	P-10400 S-7200	550 475	S2		P-3.6 S-5.5		1.2	35	
BM	3	B-614	P-11700 S-890	560 8	S2	150.	S-49. P/S-3.9	35.	22.	30	M
M	1	B-1061	P-8995 S-8800	745 745	H2	8.9	P/S-1.7		.9	30	M
BM	14	B-610	P-12000 S-11250	735 735	H2	25.5	P/S-1.6		.7	30	L, (RA) M
M	13	B-582	P-10390 S-10400	900 900	S2	23	P/S-6.		2.9	50	J,M
M	1	B-219	P-9750 S-9500	1000 1000	S2		P/S-4.7		2.6	50	M
M	6	B-418	P-10170 S-10000	1000 1000	S2		P-7.8 S-7.8	5.8 5.8		30	J
M-M	7	B-476	P-8290 S-12000	1000 1300	S2		P-9. S-5.6	4.2		35	
M	1	B-51	P-7380 S-7380	1100 1100	S2	8.5	P/S-2.8		1.5	30	K,M

x-75508

NOTES: B. Crosstalk cover. L. A & M Only.
 E. 8 layers BTC next to core. M. P/S indicates primary and secondary windings
 J. Equipped with separators. in series aiding.
 K. 7 layers BTC next to core. (P) Preferred Code.
 (RA) Winding resistance $\pm 10\%$.

B TYPE RELAYS

TABLE II (WINDING ARRANGEMENT NO. 2)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>				<u>ARM TRVL.</u>	<u>SEE NOTE</u>
			<u>TURNS</u>	<u>RES.</u>		<u>SOAK</u>	<u>OPER.</u>	<u>NON-OPER.</u>	<u>RLS</u>		
MM	5	B-50	P-7380 S-7380	1100 1100	S2		P/S-3.		1.5	40	K,M
M-M	7	B-101	P-7380 S-7380	1100 1100	S2		P/S-3.		1.1	35	K,M
BM	3	B-618	P-17000 S-2500	1150 100	S2		S-15. P-2.4	10.2		30	
BM	3	B-615	P-17000 S-7000	1150 900	S2		S-5.4 P-2.4	3.6		30	
M	1	B-170	P-11010 S-10800	1200 1200	S2		P/S-2.4		1.	30	L,M
M	6	B-1183	P-8510 S-8415	1600 1600	S2		P-5.7 S-5.7	4.8		40	
M-B	4	B-146	P-20900 S-942	1800 600	S2		P-1.2 S-30.		.4	30	L
BM	8	B-522	P-23200 S-2398	1800 1500	S2		P-1. S-11.		.2	30	
M	6	B-180	P-6600 S-16000	2000 17500	H2		S-1.5 P-4.		.4	30	
M	6	B-599	P-16250 S-16450	3000 3000	H2		P-2.3 S-2.5		.9	30	
M	1	B-244	P-19050 S-3900	8000 15000	S2		P/S-1. P-1.3		.2	30	M
M	1	B-1064	P-10720 S-10235	9000 9000	H2		P-3.9 S-3.9		2.3	30	
BM	3	B-1169(P)	P-10720 S-10235	9000 9000	H2		P-2.5 S-2.5	1.7		30	
B	2	B-284	P-14250 S-7500	10000 900	S2		P-1.7 S-3.6		.4	30	

X-75508

NOTES: K. 7 layers BTC next to core.
L. A & M Only.

M. P/S indicates primary and secondary windings in series aiding.
(P) Preferred Code

B TYPE RELAYS
TABLE III (WINDING ARRANGEMENT NO. 3)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.			ARM. TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER.	NON- OPR.		
M	1	B 54	P ₁ 810	3.5	S2		P ₁ 28.	9.	30	
			P ₂ 810	3.5			P ₂ 28.			
M	1	B 117	P ₁ 937	5.	S2		P ₁ 24.	10.	30	
			P ₂ 937	5.			P ₂ 24.			
M	1	B 1077	P ₁ 945	6.	S2		P ₁ 19.5	7.9	30	B
			P ₂ 945	6.			P ₂ 21.5			
BM	11	B 1063	P ₁ 945	6.	S2	67.	P ₁ /P ₂ -17.	7.5	40	(AA)
			P ₂ 945	6.						B
BM	3	B 14	P ₁ 1200	11.	S2		P ₁ /P ₂ 15.	11.	30	(AA)
			P ₂ 1200	11.						
BM	11	B 1154	P ₁ 1950	25.	H2	32.	P ₁ /P ₂ 9.8	4.5	30	(AA), (RB)
			P ₂ 1950	25.						
BM	14	B 1165	P ₁ 1950	25.	S2	65.	P ₁ /P ₂ 10.2	6.3	40	(AA) (RB)
			P ₂ 1950	25.						
BM	14	B 1171	P ₁ 2575	50.	S2	25.	P ₁ 13.8	10.3	30	(RA)
			P ₂ 2575	50.			P ₂ 13.8			
BM	14	B 601	P ₁ 4350	170	H2	120.	P ₁ /P ₂ 11.3	6.6	50	J,(RA) (AA)
			P ₂ 4350	170						
M	6	B 1062	P ₁ 3875	200	H2	95.	P ₁ /P ₂ 12.	7.2	30	B (AA)
			P ₂ 3875	200						
BM	3	B 593	P ₁ 4625	250	S2	27.	P ₁ 9.	4.1		(RA)
			P ₂ 4625	250			P ₂ 9.			

X-75508

NOTES: B. Crosstalk cover.
 J. Equipped with separators.
 (AA). P1/P2 indicates primary windings in series aiding.
 (RA). Winding resistance ±10%.
 (RB). Winding resistance ±15%.

B TYPE RELAYS

TABLE III (WINDING ARRANGEMENT NO. 3)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>			<u>ARM TRVL.</u>	<u>SEE NOTE</u>
			<u>TURNS</u>	<u>RES.</u>		<u>SOAK</u>	<u>OPER.</u>	<u>NON- OPR.</u>		
MM	5	B-1079	P ₁ 4780	400	S2	13.	P ₁ /P ₂ 9.2	5.5	60	(AA)
			P ₂ 4780	400						
M	6	B-574	P ₁ 5010	400	S2	13.	P ₁ /P ₂ 9.2	5.4	50	(AA)
			P ₂ 5010	400						
BM	14	B-595	P ₁ 6325	500	S2	35.	P ₁ /P ₂ 4.3	2.	40	(AA)
			P ₂ 6325	500						
M-M	7	B-590	P ₁ 4910	510	H2	35.	P ₁ /P ₂ 4.9	1.8	35	C, (AA)
			P ₂ 4910	510			P ₁ 10.2			
M	1	B-32	P ₁ 5380	1000	S2		P ₁ 4.	1.2	30	L
			P ₂ 5380	1000			P ₂ 4.			

X-75508

NOTES: C. 6 layers BTC next to core.
 L. A & M Only.
 (AA) P1/P2 indicates primary windings in series aiding.

B TYPE RELAYS
TABLE IV (WINDING ARRANGEMENT NO. 4)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>			<u>ARM TRVL.</u>	<u>SEE NOTE</u>	
			<u>TURNS</u>	<u>RES.</u>		<u>SOAK</u>	<u>OPER.</u>	<u>NON-OPR</u>			<u>RLS</u>
M	1	B-206	P-1240 S-NI	5. 5. P//S2.5	S2		40.		13.	30	N
M	6	B-344	P-1280 S-NI	4.6 50. P//S4.2	S2	75.	18.		5.	30	N
B	2	B-53	P-1300 S-NI	5. 100. P//S4.76	S2	300.	23.		9.	30	N
B	2	B-386	P-1600 S-NI	16 10 P//S6.15	S2		40.		10.	30	N
M	1	B-1	P-2600 S-NI	16.4 22 P//S9.4	S2	150	17		5.	30	N
B	2	B-2	P-2600 S-NI	16.4 22 P//S9.4	S2	150.0	15.0		5.0	30	N
BM	3	B-4	P-2600 S-NI	16.4 22 P//S9.4	S2	150	15.0		5.0	30	N
MM	5	B-330	P-2600 S-NI	16.4 22 P//S9.4	S2	300.0	31.0		9.0	40	N
M	6	B-456	P-2600 S-NI	16.4 22 P//S9.4	S2	150	15.0		4.0	30	N
M-M	7	B-192	P-2600 S-NI	16.4 22 P//S9.4	S2	300.0	27.0		3.9	35	N
B	12	B-455	P-2600 S-NI	16.4 22 P//S9.4	S2	150.0	16.5		5.8	30	N
BM	3	B-3	P-2600 S-NI	16.4 31. P//S10.7	S2	150.	15.		5.	30	N
M	1	B-81	P-2600 S-NI	16.4 50. P//S12.4	S2		12.		4.	30	N

X-75508

NOTE: N. P//S indicates primary and secondary windings in parallel.

B TYPE RELAYS

TABLE IV (WINDING ARRANGEMENT NO. 4)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING TURNS</u>	<u>WINDING RESISTANCE</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>			<u>ARM TRVL.</u>	<u>SEE NOTE</u>	
							<u>SOAK</u>	<u>OPERATE NO.</u>	<u>RELEASE</u>			
BM	3	B-165	P-2600 S-NI	16.4 50	P//S 12.4	H2		12.	4.	30	N	
MM	5	B-113	P-2600 S-NI	16.4 50	P//S 12.4	S2		21.	7.	40	N	
M-B	9	B-449	P-2600 S-NI	16.4 50	P//S 12.4	S2		12.5	3.	30	N	
M	1	B-1076	P-2600 S-NI	16.5 50	P//S 12.4	S2	200	14.	7.	30	J,N	
BM	11	B-1072	P-2600 S-NI	16.5 50	P//S 12.4	S2		13.5	6.7	30	N	
B	12	B-1045	P-2600 S-NI	16.5 50	P//S 12.4	S2		16.	5.5	30	N	
M	2	B-1089	P-2600 S-NI	16.4 50	P//S 12.4	H2	150	8.6	4.4	30	N	
M-M	7	B-250	P-2600 S-NI	19 100	P//S 16	S2		19.	4.3	35	N	
BM	3	B-448	P-3150 S-NI	30 50	P//S 18.7	S2	150.	11.	3.2	30	N	
M	6	B-343	P-3150 S-NI	30 50	P//S 18.7	S2	326	11.	3.	30	N	
M	13	B-1082	P-3150 S-NI	30 50	P//S 18.7	H2		8.2	1.8	30	A,N	
BM	3	B-1157	P-3975 S-NI	40 60	P//S 24	S2		14.2	7.2	30	N	
M	1	B-393	P-3240 S-NI	30 2000	P//S 29.5	H2	40.	24.	13.2		N	
M	1	B-1022	P-3310 S-NI	30 2000	P//S 29.5	H2	40	21.5	16.	13.2	50	N

X-75508

NOTES: A. No stop pins
J. Equipped with separators.

N. P//S indicates primary and secondary windings in parallel.

B TYPE RELAYS

TABLE IV (WINDING ARRANGEMENT NO. 4)

CONTACTS	SPRING COMB.	CODES	WINDINGS		CONT. METAL	CURRENT FLOW REQTS.				ARM. TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER.	NON- OPR.	RLS		
BM	3	B-1017	P-3310 S-NI	30 2000 P//S 29.5	S2	40.	21.5	16.	13.2	60	N
M	6	B-463	P-7675 S-NI	200 200 P//S 100	H2	34.	12.5		5.7	30	N
M	1	B-272	P-6100 S-NI	127 1000 P//S 113	S2		4.4		1.1	30	N
M-M	5	B-350	P-6100 S-NI	127 1000 P//S 113	S2		7.7		1.5	40	N
M-M	7	B-253	P-9760 S-NI	333 1000 P//S 250	S2		5.8		1.	35	N
M	1	B-92	P-11500 S-NI	430 1000 P//S 300	S2		3.		1.	30	N
M	6	B-49	P-12300 S-NI	500 750 P//S 300	S2		7.5		6.	30	N
M	1	B-373	P-16950 S-NI	1000 1000 P//S 500	S2		2.9		.7	30	N
BM	14	B-603	P-14100 S-NI	651 4000 P//S 560	S2		3.8		1.5	40	N
M	6	B-1060	P-14100 S-NI	651 4000 P//S 560	S2		1.3		.2	30	N
M	6	B-1023	P-15800 S-NI	780 2000 P//S 560	S2		1.4		.3	30	A,J,N
BM	3	B-27	P-18000 S-NI	1300 1000 P//S 565	S2		3.		1.	30	N

X-75508

NOTES: A. No stop pins.
 J. Equipped with separators.
 N. P//S indicates primary and secondary windings in parallel.

B TYPE RELAYS

TABLE V (WINDING ARRANGEMENT NO. 5)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.			ARM TRVL.	SEE NOTE
			URNS	RES.		SOAK	OPER.	NON- OPR.		
M-B	9	B 621	P-700 S-600 T-9600	1.5 17. 1400	H2		T-8 P-110 S-130	6.	40	(RA) (RB)
BM	14	B 616	P-810 S-7650 T-16400	5 900 3000	S2	160.	P-34 P/S 3.6 T-1.9		14	30 M
M	13	B 1107	P-685 S-1520 T-15400	5 1030 14500	H2		P-33 P/S 11. P/S/T 1.5		14	40 M,O
M	13	B 423	P-685 S-2140 T-16200	5 1360 17000	H2		P-34 P/S 8.9 P/T 1.6 P/S/T 1.4		9	30 M,O,Q
M	13	B 584	P-685 S-1970 T-17540	5 1700 21000	H2		P-34 P/S 9.5 P/S/T 1.3		9	40 J,M,O
BM	14	B 602	P-685 S-1970 T-17540	5 1700 21000	H2		P-34 P/S 9.5 P/S/T 1.3		9	30 M,O
BM	3	B 12	P-1500 S-5100 T-4000	10 375 2600	S2		P-18.5 S-6 T-7.8		6	30
M	6	B 588	P-1455 S-600 T-12300	15 1200 10000	H2		P-16 P/S 11.7 P/S/T 1.8		4.2	30 M,O
M	1	B 1059	P-1830 S-1830 T-3700	20 20 510	H2	46.	P/S 8.4 T-9.2		4.6	30 B,M (RA)
M	1	B 108	P-5200 S-5200 T-5200	335 465 480	S2		P-5. S-5. T-5		1.5	30 E,(RA)
BM	3	B 107	P-7100 S-7100 T-7100	375 510 605	S2		P-4. S-4. T-4.		1.5	30 L,(RA)

X-75508

- NOTES:
- B. Crosstalk cover.
 - E. 8 layers BTC next to core.
 - J. Equipped with separators.
 - L. A & M Only.
 - M. P/S indicates primary and secondary windings in series aiding.
 - O. P/S/T indicates primary, secondary and tertiary windings in series aiding.
 - Q. P/T indicates primary in series with tertiary.
 - (RA) Winding resistance $\pm 10\%$.
 - (RB) Winding resistance $\pm 15\%$.

B TYPE RELAYS

TABLE V (WINDING ARRANGEMENT NO. 5)

CONTACTS	SPRING COMB.	CODES	WINDING		CONT. METAL	CURRENT FLOW REQTS.			ARM TRVL.	SEE NOTE
			TURNS	RES.		SOAK	OPER.	NON- OPR.		
BM	3	B-111	P-7000	440	S2		P-4.	2.8	30	G, (RA)
			S-7000	840			S-4.			
			T-7000	1100			T-4.			
M	6	B-1010	P-10000	1000	S2		P-3.	1.7	40	M
			S-10000	1000			P/S 1.5			
			T-3330	2600			T-9.1			
M	1	B-1106	P-20200	1500	S2		P-.8	.3	30	O
			S-1195	8000			P/S/T .7			
			T-2750	20000						
M	6	B-426	P-8070	5000	S2		P-5.4	5.4	2.2	30
			S-8100	5000			S-6.			
			T-3260	500			T-15.			
M	6	B-422	P-11000	17000	S2		P-2.1	.5	30	M,R
			S-5200	500			S-4.9			
			T-5096	1000			P/S-1.5			
							S/T 2.5			

X-75508

NOTES: G. 2 layers BTC next to core.
 (RA) Winding resistance $\pm 10\%$.
 M. P/S indicates primary and secondary windings in series aiding.

O. P/S/T indicates primary, secondary, and tertiary windings in series aiding.
 R. S/T indicates secondary in series with tertiary.

B TYPE RELAYS

TABLE VI (WINDING ARRANGEMENT NO. 6)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>				<u>ARM. TRVL.</u>	<u>SEE NOTE</u>
			<u>TURNS</u>	<u>RES.</u>		<u>SOAK</u>	<u>OPER.</u>	<u>NON- OPR.</u>	<u>RLS</u>		
M-M	7	B 491	P-830 S-NI	1.8 400	H2		50.		9.	35	
BM	3	B 570	P-1550 S-NI	7 1000	S2		65.	48.	38.	50	
M-M	7	B 238	P-2600 S-NI	16.4 50	H2		17		4.3	35	
M	6	B 295	P-3245 S-NI	30 50	H2		7.2		1.9	30	
BM	14	B 605	P-3310 S-NI	30 500	H2	40	25.	19.	14.3	50	
M	10	B 1134	P-3310 S-NI	30 500	S2	38	22.	16.5	13.5	60	
M	1	B 225	P-3240 S-NI	30 2000	S2		7.2		2.0	30	
M	6	B 552	P-4160 S-NI	50 120	S2		5.6		1.4	30	
M	6	B 1049	P-4500 S-NI	55 40	H2	270.	4.4	2.8	1.2	30	J
M	1	B 391	P-1268 S-NI	87 1000	S2		71.	53.		50	
M	6	B 371	P-5600 S-NI	105 1000	S2		4.2		1.	30	
M	1	B 261	P-5800 S-NI	105 1000	S2		4.		1.	30	
M	1	B 252	P-4775 S-NI	115 1000	S2		4.9		1.3	30	
M	1	B 576	P-6100 S-NI	127 1000	S2		3.9		1.	30	

x-75508

NOTE: J. Equipped with separators.

B TYPE RELAYS

TABLE VI (WINDING ARRANGEMENT NO. 6)

<u>CONTACTS</u>	<u>SPRING COMB.</u>	<u>CODES</u>	<u>WINDING</u>		<u>CONT. METAL</u>	<u>CURRENT FLOW REQTS.</u>				<u>ARM. TRVL.</u>	<u>SEE NOTE</u>
			<u>TURNS</u>	<u>RES.</u>		<u>SOAK</u>	<u>OPER.</u>	<u>NON- OPR.</u>	<u>RLS</u>		
M	1	B-283	P-14700 S-NI	800 6000	H2	35.	3.9		1.9	50	
M-M	7	B-1162	P-3970 S-NI	820 1000	H2	50.	7.9		5.5	35	
M	6	B-326	P-9150 S-NI	1000 1000	S2	36.	8.9		4.9	50	
M-M	7	B-275	P-9150 S-NI	1000 1000	S2		10		4.9	50	
M	1	B-218	P-17000 S-NI	1000 5500	S2	35.	4.6		2.4	50	
M-M	7	B-384	P-21160 S-NI	2000 2000	S2	6.	4.		1.8	50	

X-75508

B TYPE RELAYS

TABLE VII (WINDING ARRANGEMENT NO. 7 TO NO. 39)

CONTACTS	SPRING COMB.	CODES	WINDING		WDG. ARR.	CONT. METAL	CURRENT FLOW REQTS.			SEE NOTE	
			TURN	RES.			SOAK	OPER.	NON-OPR.		RLS
BM	3	B 42	P-2600 S-NI T-NI	16.4 36. 14	#7	S2	150.	P//S/T 12. P//T 20.	4.	30	S,T
BM	3	B 1088	P-2600 S-NI T-NI	16.4 36. 14	#7	H2	150.	P//S/T 8.6	4.4	30	S
M	1	B 59	P-2175 S-17380	27 12000	#9	S2		P/S 1.2 P 11.8	.3	30	G,M
BM	3	B 100	P-2175 S-17380	27 12000	#9	S2		P 10.8 P/S 1.3	2.8	30	G,M
M	6	B 361	P-2175 S-17400	27 12000	#9	S2		P/S 1.2 P 12.	.3	30	G,M
BM	8	B 431	P-2175 S-17380	27 12000	#9	S2		P/S 1.2 P 11.8	.3	30	G,M
M-B	9	B 535	P-2175 S-17380	27 12000	#9	S2	58	P 17. P/S 2.1	7.5	30	F,M
BM	8	B 1138	P-2175 S-17380	27 12000	#9	H2		P/S 1. P 9.8	.5	30	G,M
M	6	B 578	P-2300 S-22100	27 12000	#9	S2		P/S 1. P/S 11.5	.2	30	M
BM	8	B 416	P-2300 S-22100	27 12000	#9	S2		P 10.1 P/S 1.1	2.6	30	M
M-M	7	B 1031	P-2300 S-21805	27 12000	#9	S2		P-11.5 P/S 1.2	4.6	35	M
M-B	9	B 123	P-2300 S-8300	32 400	#9	S2		P/S 2.8	1.	30	M
BM	3	B 1181	P-2180 S-33700	80 49000	#9	S2		P 8.2 P/S .6	4.1	30	M
M	6	B 1068	P-3760 S-25175	85 12000	#9	S2		P/S .7 P 5.9	.2	30	B,M
BM	8	B 1098	P-3760 S-25175	85 12000	#9	S2		P/S .7 P5.9	.2	30	M

X-75508

NOTES: B. Crosstalk cover.
 F. 4 layers BTC next to core.
 G. 2 layers BTC next to core.
 M. P/S indicates primary and secondary windings in series aiding.

S. P//S/T indicates primary and secondary in parallel in series with tertiary.
 T. P//T indicates primary in parallel with tertiary.

B TYPE RELAYS

TABLE VII (WINDING ARRANGEMENT NO. 7 TO NO. 39)
CURRENT FLOW REQTS.

CONTACTS	SPRING COMB.	CODES	WINDING		WDG. ARR.	CONT. METAL	SOAK	OPER.	NON- OPR.	RLS	ARM. TRVL	SEE NOTE
			URNS	RES.								
BM	8	B-1132	P-3760 S-26174	85 20000	#9	S2	15	P 7.6 P/S 1.1		4.1	30	M
M	1	B-1092	P-4250 S-22730	160 24000	#9	S2		P/S .5 P 3.5		.2	30	G,M
BM	3	B-1018	P-4250 S-22730	160 24000	#9	S2		P/S .5 P 3.5		.2	30	G,J,M
BM	14	B-1170	P-4250 S-22730	160 24000	#9	H2		P/S 1.2 P 8.3		.6	30	G,M
BM	3	B-61	P-2240 S-2100 T-NI	15 200 40	#10	S2		P 10. S 12.		3.5	30	
M-M	7	B-248	P-2000 S-11600 T-NI	27 1000 6000	#10	S2		S 3.7 P 24.		.7	35	
BM	3	B-197	P-2570 S-660 T-NI	45 5 1000	#10	S2		P/S 7.2 S 36.		2.	30	M
M-M	7	B-130	P-1355 S-NI	5 200	#11	S2		P 31.		7.	35	L
BM	8	B-1175	P-4500 S-NI	55 70	#11	H2	150.	P//S 6.6		3.9	30	N
M	6	B-581	P-4650 S-NI	57.5 442.5	#11	S2		P 13.1		6.3	50	J
M	6	B-514	P-4470 S-NI	60 1000	#11	S2		P 5.3		1.4	30	
M	1	B-79	P-5550 S-NI	87 1000	#11	S2		P 4.5			30	
BM	3	B-598	P-1215 S-127	93 1000	#11	S2	150.	P 85.		50.	50	
BM	3	B-84	P-5250 S-NI	125 1000	#11	S2		P 4.5		1.5	30	
M	13	B-1115	P-24500 S-NI	2200 4500	#11	S2		P 2.		1.2	50	
B	2	B-116	P-7500 S-NI T-NI	200 500 2300	#12	S2		P//S 6.5		5.		L,N
M	1	B-214	P-12945 S-NI T-NI	1000 1000 500	#12	S2	80.	P//S 18. 14.				N
				P//S143 P//S500							30	

X-75508

NOTES: G. 2 layers BTC next to core.
 J. Equipped with separators.
 L. A & M Only.
 M. P/S indicates primary and secondary windings in series aiding.
 N. P//S indicates primary and secondary windings in parallel.

B TYPE RELAYS

TABLE VII (WINDING ARRANGEMENT NO. 7 TO NO. 39)

CONTACTS	SPRING COMB.	CODES	WINDING		WDG. ARR.	CONT. METAL	ARM. TRVL.	CURRENT FLOW REQTS.			SEE NOTE
			TURNS	RES.				SOAK	OPER.	N.O.	
BM	3	B-129	P-1245 S-NI T-NI	5 25 40	#13	S2	30	P 19.		5.	
M	1	B-143	P-4180 S-2230 T-NI	54 2500 100	#14	S2	30	P//T30. P//T/S17.	23.		L, (RA) T, U
M	1	B-194	P-4000 S-6200 T-NI38	60 700 P//T23.2	#14	S2	30	P//T29. S 8.	20.		T
M-M	7	B-347	P-1180 S-6200 T-NI	5 500 25	#14	S2	35	P//T66 S 12.	48.		L, T
M-B	4	B-155	P-810 S-5050 T-11600	5 275 1300	#15	S2	30	P 55. P/S 8.3 P/S/T 2.8	40.		M, O
M	6	B-1004	P-7800 S-7800 T-7800	300 690 1309	#15	S2	50	S 5. P 5. T 5.	3.7	2.7	(RA) (RC)
BM	11	B-1005	P-7800 S-7800 T-7800	300 690 1309	#15	S2	50	S 5. P 5. T 5.	3.7	2.7	
BM	8	B-1043	P-7000 S-7000 T-7000	328 553 761	#15	S2	50	S 7.2 P 7.4 T 7.4	5.4	4.3	(RA) (RB)
M-B	4	B-196	P-4350 S-4350 T-NI	100 104 1000	#16	S2	30	P/S 9.	6.3	3.6	M, (RA)
M	6	B-466	P-1700 S-1720	10 40	#19	S2	50	265. P/S 21. P 44.5		11.6	B, J M
B	2	B-538	P-1760 S-NI T-NI P/S	8 16 16 5.34	#20	S2	30	110. P//S 18.5		5.4	B, L N
M	1	B-1128	P-3310 S-NI T-NI	30 2000 560	#20	S2	50	40. P//S 21.5	16.	13.2	N

X-75508

NOTES:

- | | |
|---|--|
| B. Crosstalk cover. | U. P//T/S indicates primary and tertiary in parallel in series with secondary. |
| J. Equipped with separators. | |
| L. A & M Only. | |
| M. P/S indicates primary and secondary windings in series aiding. | (RA) Winding resistance ±10%. |
| N. P//S indicates primary and secondary windings in parallel. | (RB) Winding resistance ±15%. |
| O. P/S/T indicates primary, secondary and tertiary windings in series aiding. | (RC) Winding resistance ±2%. |
| T. P//T indicates primary in parallel with tertiary. | |

B TYPE RELAYS

TABLE VII (WINDING ARRANGEMENT NO. 7 TO NO. 39)

CONTACTS	SPRING COMB.	CODES	WINDING		WDG. ARR.	CONT. METAL	ARM. TRVL.	CURRENT FLOW REQTS.				SEE NOTE
			TURNS	RES.				SOAK	OPER.	NO.	RLS.	
M	1	B-1044	P-2000	58.5			30	P//Q/T/S//Qu	1.		.2	A,Y,X
			S-2150	58.5								
			T-14150	13000								
			Quat-NI	34								
			Quin-NI	34								
			P//Q 26									
			S/Qu26			#21 S2						
M	1	B-1036	P-1375	48.5			30	P//Q/T/S//Qu	.6		.2	B,Y,X
			S-1325	48.5								
			T-25645	24000								
			Quat-NI	56								
			Quat-NI	56								
			P//Q 26									
			S/Qu26			#21 S2						
M	6	B-346	P-1120	20			30	P-21.			5.	M,O
			S-5760	330								
			T-7250	650								
			Q-NI	1600								
BM	3	B-1048	P-1870	17.3			30	P//Q/S//T	8.7		3.5	Z
			S-1815	17.3								
			T-NI	25								
			Q-NI	25								
						P//Q 10.2						
			S//T 10.2			#25 S2						
BM	3	B-1109	P-1870	17.3			30	P//Q/S//T	8.7		3.5	Z
			S-1815	17.3								
			T-NI	25								
			Q-NI	25								
BM	8	B-1113	P-2750	40			30	P//Q/S//T	8.7	100.	5.1	Z
			S-2690	40								
			T-NI	40								
			Q-NI	40								
						P//Q 20						
			S//T 20			#25 H2						
M-M	7	B-1123	P-3050	55			35	P//Q/S//T	9.1		5.	L,Z
			S-3085	55								
			T-NI	55								
			Q-NI	55								
						P//Q 27.5						
			S//T 27.5			#25 S2						
BM	8	B-1173	P-3050	55			30	P//Q/S//T	5.8		3.4	Z
			S-3085	55								
			T-NI	55								
			Q-NI	55								
						P//Q 27.5						
			S//T 27.5			#25 S2						

X-75508

NOTES:

- A. No stop pins.
- B. Crosstalk cover.
- L. A & M Only.
- M. P/S indicates primary and secondary windings in series aiding.
- O. P/S/T indicates primary, secondary and tertiary windings in series aiding.
- X. P//Q/S//Qu indicates primary in parallel with quaternary in series with secondary in parallel with quinary.
- Y. P//Q/T/S//Qu indicates primary in parallel with quaternary in series with secondary in parallel with quinary and in series with tertiary.
- Z. P//Q/S//T indicates primary in parallel with quaternary in series with secondary and in parallel with tertiary.

B TYPE RELAYS

TABLE VII (WINDING ARRANGEMENT NO. 7 TO NO. 39)

CONTACTS	SPRING COMB.	CODES	WINDING		WDG. CONT. ARR.	METAL	ARM TRVL.	CURRENT FLOW REQTS.			SEE NOTE	
			URNS	RES.				SOAK	OPER.	N.O.		RLS
BM	3	B-589	P-9700 S-1010 T-NI	500 27 1000	#26	S2	50	S 75. P 8.6		56.		
BM	3	B-1148	P-31100 S-1750 T-NI	7900 375 10450	#27	S2	30	P .5 S 9.8			.2	
BM	3	B-1120	P ₁ 243 P ₂ 243 S-30370 T-NI Q-NI	6.6 6.6 21550 6.6 6.6			30		P ₁ //T/S/P ₂ //Q			W.
				P ₁ //T 3.3 P ₂ //Q 3.3	#29	S2		4.1	.7		.4	
M	6	B-1129	P-2175 S-NI T-NI	12.4 50 100			30	P//S 12.9			7.3	N
				P//S 10.	#31	S2						
BM	8	B-606	P-3250 S-3230 T-9550	85 800 1000	#32	S2	30	38. P 9.6 T 3.6 S 10.7	5.5	3.8	(RB)	
BM	14	B-1158	P-1510 S-1510 T-1500 Q-NI	22 23 15.5 140	#34	S2	30	P 19. S 19. T/Q 19.	14.1	9.8	B, V (RA) (RB)	
BM	14	B-608	P-4800 S-9500 Outer P-4800 T-NI	190 595 365 1500	#36	H1	40	95. P//T 12. 34. P/S 4.3	8.9 3.2	5.8 2.	B,M,T (RA)	
				P//OP 555								
BM	3	B-1151	P ₁ 2050 P ₂ 2050 S-NI	23 23 44	#37	S2	40	150. P ₁ 11.8			7.5	(RA)
MM	15	B-1163	P ₁ 2050 P ₂ 2050 S-NI	23 23 44	#37	H2	35	150. P ₁ 11.5			6.7	(RA)

NOTES:

- | | |
|---|---|
| B. Crosstalk cover. | W. P ₁ //T/S/P ₂ //Q indicates P ₁ in parallel with tertiary in series with secondary in series with P ₂ in parallel with quaternary. |
| M. P/S indicates primary and secondary windings in series aiding. | (RA) Winding resistance ±10%. |
| N. P//S indicates primary and secondary windings in parallel. | (RB) Winding resistance ±15%. |
| V. T/Q indicates tertiary in series with quaternary. | |

x-75508

B TYPE RELAYS

TABLE VII (WINDING ARRANGEMENT NO. 7 TO NO. 39)

CONTACTS	SPRING COMB.	CODES	WINDING		WDG. ARR.	CONT. METAL	ARM. TRVL.	CURRENT FLOW REQTS.			SEE NOTE
			URNS	RES.				SOAK	OPER.	N.O.	
BM	3	B-622	P ₁ 2475 P ₂ 2475 S-NI	31 31 60			30	150.	P ₁ 11.7		4.8 (RA)
M-M	7	B-1160	P ₁ 2200 P ₂ 2200	25 25		#37 #38	S2 H2		P ₁ 10.5		5 (RA)
M-B	9	B-1176	P ₁ 2200 P ₂ 2200	25 25		#38	H2	30	150.	P ₁ 19	14.1 (RA)
BM	14	B-1159	P ₁ 2200 P ₂ 2200	25		#38	H2	30		P ₁ 8.2	4.1 (RA)
BM	✓ 16	B-1177	P ₁ 2650 P ₂ 2650	35 35		#38	S2	20	150.	P ₁ 10.5	7.9 5.8 A (RA)
BM	3	B-1167	P ₁ 2650 P ₂ 2650	35 35		#38	S2	30	150.	P ₁ 6.8	3.0 (RA)
BM	14	B-1182	P ₁ 2950 P ₂ 2950	45 45		#38	H2	30		P ₁ 9.8	7.2 5. (RA)
BM	11	B-623	P ₁ 3360 P ₂ 3360	55 55		#38	S2	30	185.	P ₁ 5.6	1.9 (RA)
BM	14	B-1178	P-950 S-2200 T-1250 P/T26	7 26 19 #39			S2	30		S 12.8 P 12.8	9.6 7. (RA)
M	6	B-567	P-2500 S-6300 T-3800 P/T500	59 500 441 #39			H2	30	27	P/S 3.9	1.8 (RA) M

X-75508

NOTES: A. No stop pins.
M. P/S indicates primary and secondary windings in series aiding.
(RA). Winding resistance ±10%.

G TYPE RELAYS

TABLE VIII - WINDING ARRANGEMENT NO. 1

<u>Contacts</u>	<u>Spring Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Reqts.</u>			<u>See Note</u>
			<u>Turns</u>	<u>Res.</u>			<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	
M	13	G94	1500	11	#2	40	150.	17.	5.8	J, (RA)
BM	14	G102	1500	11	H2	40	150.	20.	9.2	
M	1	G5	5210	150	#2	30	-	4.5	1.5	
B	2	G10	5210	150	#2	40		5.3	1.5	
M	6	G39	4450	175	H2	40	62.	9.2	5.6	
M-M	7	G24	4450	175	#2	40		11.	5.	
BM	14	G104	6050	250	H2	50	100.	10.	5.8	
B	2	G28	7150	365	#2	40		3.7	1.0	
BM	3	G17	8800	500	#2	40		3.4	0.9	
M	6	G15	8800	500	H2	40		5.0	2.0	
M-B	9	G21	8800	500	#2	40		3.4	0.2	
B	2	G75	8100	630	#2	50		9.0	5.1	
B	2	G32	9100	900	#2	40		3.0	0.8	
B	2	G30	9500	1440	#2	40		2.8	0.8	
BM	3	G26	16000	1550	#2	30		2.0	0.3	
M	6	G11	16000	1550	#2	30		1.5	0.5	
B	2	G31	9875	1980	#2	40		2.7	0.7	
M-M	7	G50	20,460	10,000	H2	30		1.6	0.2	
BM	11	G47	20,460	10,000	H2	30		1.6	1.1	
MM	5	G103	29,790	20,000	H2	50		1.5	.4	

X-75508

NOTES:

J. Equipped with separators
 (RA) Winding resistance $\pm 10\%$

G TYPE RELAYS

TABLE VIII - WINDING ARRANGEMENT NO. 2

<u>Contacts</u>	<u>Spring Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Reqts.</u>				<u>See Note</u>
			<u>Turns</u>	<u>Res.</u>			<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>	
M	1	G80	1100 1100	10 10	#2	40	P/S 150	26	19	17	(RA) M
B	2	G87	1100 1100	10 10	#2	40	P/S 150	29.0		17.5	(RA) M
M	13	G88	1100 1100	10 10	H2	40	P/S 150	24.5		14.5	(RA) J,M
M-M	7	G96	1100 1100	10 10	H2	40	P/S 180	12.3		3.7	(RA) M
B	12	G97	1100 1100	10 10	H2	40	P/S 150	24.5		14.5	(RA) M
BM	3	G98	1100 1100	10 10	#2	40	P/S 150	24.5		14.5	(RA) M
M-B	9	G109	1240 1240	11.5 11.5	H2	50	P/S 120.	33.5	24.		M
M-M	7	G110	1240 1240	11.5 11.5	#2	30	P/S 150	12.5	8.1	3.7	(RA) M
BM	14	G90	1240 1240	11.5 11.5	H2	40	P/S 150	21.0		12.2	(RA) M
BM	14	G105	1990 1990	36 36	#2	40	P/S 150	11.5		6.7	(RA) M
BM	3	G1	2000 2000	75 75	#2	40	P/S 75.0	7.8		5.0	M
M-M	7	G36	2000 2000	75 75	#2	40	P/S 75.0	6.8		3.0	M

X-75508

NOTES: J. Equipped with separators.
 (RA) Winding resistance ± 10%.
 M. P/S indicates primary and secondary windings in series aiding.

G TYPE RELAYS

TABLE VIII - WINDING ARRANGEMENT NO. 2

<u>Contacts</u>	<u>Spring Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Repts.</u>				<u>See Note</u>
			<u>Turns</u>	<u>Res.</u>			<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>	
BM	8	G8	2000 2000	75 75	#2	40	P/S -	10.0		5.0	M
BM	3	G2	3240 4450	100 400	#2	30	Pri. - P/S	8.0 3.7		3.0	M
M	1	G79	3530 3530	220 215	#2	40	P/S	39.0	4.4	2.4	M
M	6	G58	2610 10750	225 750	#2	30	Sec. - Pri.	2.7 12.3	1.4		
M-M	7	G20	2748 2700	250 250	#2	60	P/S	16		6.0	M
B	12	G41	2737 2700	250 250	#2	40	P/S	50.0	10.4	6.6	J,M
B	2	G43	2737 2700	250 250	#2	40	P/S -	5.4		0.8	M
M	1	G45	2737 2700	250 250	#2	40	P/S	50.0	9.4	6.6	M
M	6	G49	2737 2700	250 250	H2	50	P/S	50.0	10.9	6.6	M
M-M	7	G51	2748 2700	250 250	H2	40	P/S	51.0	6.8	4.3	M
BM	8	G53	2737 2700	250 250	#2	40	P/S	50.0	8.8	5.6	M
M-B	4	G16	2714 2714	300 300	#2	50	P/S -	12.0		5.6	M

X-75508

NOTES:

- J. Equipped with separators
- M. P/S indicates primary and secondary windings in series aiding.

G TYPE RELAYS

TABLE VIII - WINDING ARRANGEMENT NO. 2

<u>Contacts</u>	<u>Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Repts.</u>				<u>See Note</u>	
			<u>Turns</u>	<u>Res.</u>			<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>		
M	6	G22	2714 2714	300 300	#2	40	P/S	-	8.0		3.0	M
M-M	7	G23	2714 2714	300 300	#2	40	P/S Pri.	-	9.5 20.0		3.0	M
M-M	7	G76	4260 4260	340 335	#2	30	P/S	-	3.5		0.2	M
M-B	4	G9	6350 1525	400 34	#2	30	Pri. Sec.	-	4.0 19.0		1.3	
M	1	G7	5900 6300	450 450	#2	30	Pri. Sec.	-	3.8 3.9		1.2	
M-M	7	G27	5900 6300	450 450	#2	40	Pri. Sec.	-	7.0 7.3		2.9	
BM	11	G56	5900 6300	450 450	#2	30	P/S	-	3.0		1.1	M
M	6	G46	7450 14335	480 12000	#2	30	P/S Pri.	1.3 4.2	0.7			M
M-M	7	G73	4435 4480	500 500	#2	35	P/S	-	3.9		1.1	M
BM	8	G77	5650 6315	500 500	#2	40	P/S	19.0	3.0		1.1	G,M
M	6	G29	6470 6300	500 3500	#2	30	Pri. Sec.	38.0 -	2.2 2.5		0.3	
M-M	7	G38	6470 6300	500 3500	H2	40	Pri. Sec.	-	4.6 5.2		1.0	

X-75508

NOTES:

- G. 2 layers BTC next to core.
- M. P/S indicates primary and secondary windings in series aiding.

4-1-55

G TYPE RELAYS

TABLE VIII - (WINDING ARRANGEMENT NO. 2)

<u>Contacts</u>	<u>Spring Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Repts.</u>				<u>See Note</u>	
			<u>Turns</u>	<u>Res.</u>			<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>		
M	6	G52	6750 12515	520 12000	#2	30	Pri. P/S	3.7 -	1.2		O.C.	M
M	1	G78	5335 5320	750 750	#2	60	P/S	22.0	7.5		4.5	M
M	13	G89	9100 9200	900 900	H2	50	P/S Sec.	15.0 3.0	3.0 6.3		1.8	M
MM	5	G69	5335 5305	950 950	#2	40	P/S	-	3.2		1.1	M
M-M	7	G63	5355 5237	1100 1100	#2	35	P/S		3.5		1.1	M
M	6	G68	5355 5237	1100 1100	#2	30	P/S		3.2		1.1	M

X-75508

NOTE:

M. P/S indicates primary and secondary windings in series aiding.

G TYPE RELAYS

TABLE VIII - WINDING ARRANGEMENT NO. 3 TO NO. 39

<u>Contacts</u>	<u>Spg. Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Wdg. Arr.</u>	<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Reats.</u>				<u>See Note</u>
			<u>Turns</u>	<u>Res.</u>				<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>	
M-M	7	G108	2875 2875	190 190	#3	#2	50 P1/P2	100.	9.3	7.0	5.0	(AA) (RA)
M-B	4	G100	3120 3120	210 210	#3	H2	30 P1/P2	45.	4.5		1.4	(AA) (RA)
M-M	7	G86	3075 3075	250 250	#3	H2	35 P1/P2	-	6.6		2.7	(AA) (RA)
M-M	7	G91	3550 3550	250 250	#3	#2	40 P1/P2	80.	5.8		3.6	(AA) (RA)
M	13	G93	3550 3550	250 250	#3	H2	60 P1/P2	39.	11.9		6.6	(AA) (RA)
BM	11	G84	5000 5000	400 400	#3	#2	40 P1/P2	-	3.3		1.1	(AA) (RA)
M	6	G48	6520 3725 3662	500 1000 1000	#5	#2	30 Pri. S/T	- -	5.6 4.5	3.0	0.8	R
M	6	G92	4880 15DTs	98.5 150	#6	H2	30 Pri.	-	5.2		0.4	
BM	8	G99	5825 25DTs	147 125	#6	H2	30 Pri.	50.	2.7		0.3	
B	2	G55	5250 60DTs	205 18	#6	#2	30 Pri.	-	8.0		2.0	
M	6	G70	5250 60DTs	205 18	#6	#2	20 Pri.	-	4.6		0.2	
BM	14	G112	8050 3075 95DTs	300 2225 1475	#10	#2	60 Pri. Sec.	90.	9.5	6.2 16.0	5.9	(RA)
B	2	G95	P1 2030 P2 2030 S1 2030 S2 2020	150 150 145 145	#28	#2	60 P1/S1 P2/S2	61. 23.5	23.0		15.0	(RA) (AB) (AC)
BM	14	G101	P.4000 S1 2000 S2 2000	155 230 230	#33	H2	40 S1/S2 P/S1/S2	69. -	13.0 6.5		8.0	(AD) (AE) (RA)

X-75508

NOTES:

- R. S/T indicates secondary in series with tertiary.
- (AA). P1/P2 indicates primary windings in series aiding.
- (AB). P1/S1 indicates primary 1 in series with secondary 1.
- (AC). P2/S2 indicates primary 2 in series with secondary 2.
- (AD). S1/S2 indicates secondary windings in series aiding.
- (AE). P/S1/S2 indicates primary in series with secondary 1 in series with secondary 2.
- (RA). Winding resistance $\pm 10\%$.

G TYPE RELAYS

TABLE VIII - WINDING ARRANGEMENT NO. 3 TO NO. 39

<u>Contacts</u>	<u>Spg. Comb.</u>	<u>Codes</u>	<u>Winding</u>		<u>Wdg. Arr.</u>	<u>Cont. Metal</u>	<u>Arm. Trvl.</u>	<u>Current Flow Repts.</u>				<u>See Note</u>			
			<u>Turns</u>	<u>Res.</u>				<u>Soak</u>	<u>O.</u>	<u>N.O.</u>	<u>Rel.</u>				
MM	15	G106	P.	4000	155	#33	H2	50	S1/S2	69.	13.0	7.2	(AD)		
			S1	2000	230				Pl/S1/S2	-				6.5	(AF)
			S2	2000	230										(RA)
BM	11	G113	3330	250	#39	#2	50	P/S	70.	10.3	6.5	D,M			
			3330	250											

X-75508

NOTES:

- D. .020" stop pins
- M. P/S indicates primary and secondary windings in series aiding.
- (AD). S1/S2 indicates secondary windings in series aiding.
- (RA). Winding resistance $\pm 10\%$.
- (AF). Pl/S1/S2 indicates primary 1 in series with secondary 1 in series with secondary 2.

SECTION IV
REFERENCE NOTES

REFERENCE NOTES

- A. No stop pins.
 - B. Crosstalk cover.
 - C. 6 layers BTC next to core.
 - D. .020" stop pins.
 - E. 8 layers BTC next to core.
 - F. 4 layers BTC next to core.
 - G. 2 layers BTC next to core.
 - H. 14 layers BTC next to core.
 - J. Equipped with separators.
 - K. 7 layers BTC next to core.
 - L. A & M Only
 - M. P/S indicates primary and secondary windings in series aiding.
 - N. P//S indicates primary and secondary windings in parallel.
 - O. P/S/T indicates primary, secondary and tertiary windings in series aiding.
 - Q. P/T indicates primary in series with tertiary
 - R. S/T indicates secondary in series with tertiary.
 - S. P//S/T indicates primary and secondary in parallel in series with tertiary.
 - T. P//T indicates primary in parallel with tertiary.
 - U. P//T/S indicates primary and tertiary in parallel in series with secondary.
 - V. T/Q indicates tertiary in series with quaternary.
 - W. P1//T/S/P2//Q indicates P₁ in parallel with tertiary in series with secondary in series with P₂ in parallel with quaternary.
 - X. P//Q/S//Qu indicates primary in parallel with quaternary in series with secondary in parallel with quaternary.
 - Y. P//Q/T/S//Qu indicates primary in parallel with quaternary in series with secondary in parallel with quaternary and in series with tertiary.
 - Z. P//Q/S//T indicates primary in parallel with quaternary in series with secondary and in parallel with tertiary.
-
- (AA). P1/P2 indicates primary windings in series aiding.
 - (AB). P1/S1 indicates primary 1 in series with secondary 1.
 - (AC). P2/S2 indicates primary 2 in series with secondary 2.
 - (AD). S1/S2 indicates secondary windings in series aiding.
 - (AE). P/S1/S2 indicates primary in series with secondary 1 in series with secondary 2.
 - (AF). P1/S1/S2 indicates primary 1 in series with secondary 1 in series with secondary 2.
-
- (RA). Winding resistance $\pm 10\%$.
 - (RB). Winding resistance $\pm 15\%$.
 - (RC). Winding resistance $\pm 2\%$.
-
- (P). Preferred codes.

X-75508