

## STANDARD GRAPHICAL SYMBOLS

This Pamphlet contains the information issued in the British Standards Institution Specification No. 530—1937 entitled "British Standard Graphical Symbols for Telephony, Telegraphy and Radio-Communication." These symbols have been adopted for use throughout the British P.O. Telegraph, Telephone and Radio Services in all official correspondence, instructions, circulars, specifications, drawings, diagrams, etc. This information was previously issued as "Pamphlet for Workmen, A9," which is hereby superseded.

### FOREWORD

In diagrams of electrical installations, apparatus and parts of apparatus cannot be represented in all their details. For this reason, symbols have been standardized for practical use, by means of which it is possible to draw any diagram in the minimum of time, whilst giving it the desired clearness within a convenient compass.

To obtain the greatest benefit from these advantages, it is essential that the symbols illustrated in this Pamphlet should, as far as possible, convey the same meaning to all concerned. The information is accordingly in conformity to a large extent with the list of symbols issued by the International Electro-technical Commission (I.E.C. Publication 42-1936) and the recommendations of the relative International Consultative Committees.

In selecting and devising symbols, particular attention has been paid to the following points :—

(a) The symbols should be simple in form, to facilitate drawing and to avoid loss of time.

(b) The symbols should be clear and should avoid any confusion with other symbols.

(c) The symbols should include only characteristic elements (generally, combined symbols are not included).

(d) Symbols should show *diagrammatically* the working of the apparatus marked in the circuit.

(e) The mechanical construction of the apparatus or part of the apparatus to be represented is of secondary importance. For instance, the same symbol is used for all kinds of relays *which are used for similar purposes*, although the type of construction may be very different.

(f) Pictorial drawings should be avoided, since it must be remembered that the symbols are intended for diagrams of electrical circuits and not for guidance in the construction of the apparatus.

(g) Symbols for telephony, telegraphy, and radio-communication cannot be considered separately if needless repetition is to be avoided.

(h) The designation of the symbol should be concise and clear.

In conformity with the I.E.C. Publication previously mentioned, symbols have been arranged in four sections and an appendix, as follows :—

*Section 1.* Symbols common to telecommunications :—

- (a) for use on circuit diagrams
- (b) " " " skeleton drawings
- (c) " " " plans

*Section 2.* Symbols particular to telephony.

*Section 3.* Symbols particular to telegraphy :—

- (a) for use on circuit diagrams
- (b) " " " skeleton drawings
- (c) " " " plans

*Section 4.* Symbols particular to radio-communication :—

- (a) for use on circuit diagrams
- (c) " " " plans

*Appendix.*—This contains I.E.C. symbols which are materially different from the B.S. symbols, or which are not required for use in Great Britain due to differences between Continental and British practice, but are included so that foreign diagrams can be understood.

Following the principle referred to in (g) above, the numbering is continuous and as many symbols as possible have been included in Section 1. To allow for future extension without alteration to the existing numbering, groups of numbers have been left between the various Sections.

Against the number of each symbol, the corresponding number in the I.E.C. Publication is shown. Symbols against which a corresponding I.E.C. number is not shown are those which have been introduced for national use only. Where the I.E.C. number is marked †, the symbol adopted for national use is different from the I.E.C. symbol. Where the I.E.C. number is marked \*, the title of the symbol has been altered.

It should be noted that the symbols previously used to indicate slow-operating and slow-releasing relays have been reversed. Diagrams using the new symbols have a special corner stamp, in which are shown the symbols actually used to indicate slow-operating and slow-releasing relays.

*Motors, generators, and other heavy-current apparatus used in connexion with telecommunications* should be represented by the corresponding symbols given in B.S.S. No. 108—"Graphical Symbols for General Electrical Purposes"—except those which are shown in this Pamphlet.

**GUIDING PRINCIPLES TO BE OBSERVED WHEN USING THE SYMBOLS**

(a) Diagrams should show the apparatus in the *un-operated* positions, unless specifically stated otherwise.

(b) Generally, diagrams should be so drawn that, in studying the operation of the circuit, the diagrams are read from *left to right or from top to bottom*.

(c) Three types of *arrow-head* will be found in use in the symbols, viz. :—

- (i) Closed For instrument pointer (e.g. symbol 18);
- (ii) Semi-closed For variability (e.g. symbol 19);
- (iii) Open For direction (e.g. symbols 37.3 and 202).

(d) The “*detached-contact*” system is recommended for illustrating schematic circuit arrangements. Under this system, a relay is designated by a combination of letter and figure, e.g.  $\frac{H}{3}$ . The letter identifies the relay and the figure shows the total number of contact units. The contact units are indicated thus :—

H1, H2, H3.

A relay having more than one winding should not be shown with the windings separated.

Keys may also be shown by the “*detached-contact*” system. Each contact unit should be designated by letters followed by a figure, and, on a suitable position in the diagram, there should be indicated the key function and the total number of contact units.

e.g.  $\frac{\text{Time Pulse (KTP)}}{3}$

The contact units are indicated thus :—

KTP1, KTP2, KTP3.

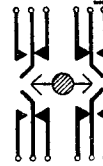
A two-position key should be indicated by a + sign between the designations, thus :—

$\frac{\text{Time Pulse (KTP)}}{3} + \frac{\text{Cut-off (KCO)}}{2}$

(e) In *key symbols*—where the contact units are not *detached*—a lever and arrows to indicate the direction

of motion of the key springs are not normally shown; if doubt exists as to the operation of contact units, the lever and arrows should be included.

Example :—



(f) Wires in contact should NOT be shown crossing thus :—



but SHOULD be ‘staggered’, thus :—



(g) *Alternative symbols* have been adopted to show the same apparatus, where this is considered necessary to give clearness and simplicity according to the type of diagram; e.g. symbols 65.1 and 219 represent the same piece of apparatus for circuit and trunking diagrams, respectively.

(h) The *contact metal* generally used is silver. Where a metal other than this is employed, it should be indicated on the diagram by its chemical symbol, e.g. Symbols 36.7 and 36.8.

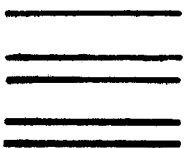
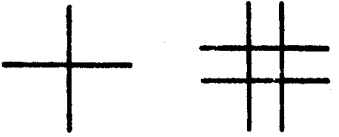
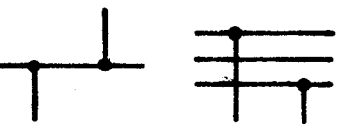

(j) The application of the foregoing principles and the uses of some of the symbols are illustrated in Figs. 1—4.

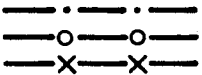





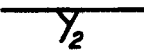




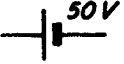
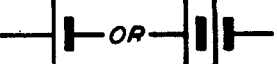
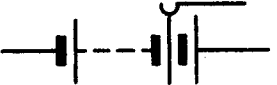


# SECTION I.







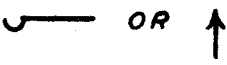






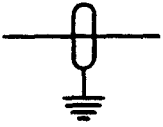


## SYMBOLS COMMON TO TELECOMMUNICATIONS.



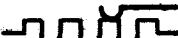










### (a) FOR USE ON CIRCUIT DIAGRAMS.






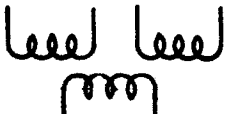
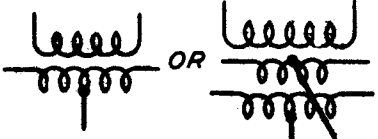
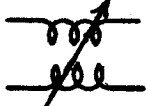
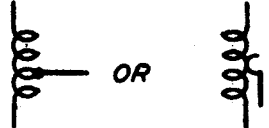
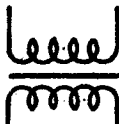
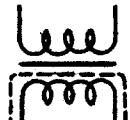
Note:- \* Indicates that the I.E.C. title has been modified  
 † Indicates that the I.E.C. symbol has been modified.

No.	I.E.C. No.	DESCRIPTION	SYMBOL
1	1	<p><b>DIRECT CURRENT.</b></p> <p>Note:- in the case where the symbol — is not suitable, for example, where confusion with the minus sign may result, <math>\text{---}</math> should be shown.</p>	—
		<p><b>ALTERNATING CURRENT.</b></p>	
2	2	<b>GENERAL SYMBOL.</b>	~
2-1	3	<b>AUDIO-FREQUENCY.</b>	≈
2-2	4	<p style="text-align: center;"><b>SUPERAUDIO-FREQUENCY.</b></p> <p>Note:- The frequency in cycles per second may be added to symbols 2, 2-1 and 2-2. If there are n frequencies present simultaneously xn may be added to the symbol.</p>	≈
3		<b>CURRENT, SUBAUDIO-FREQUENCY.</b>	⌘
4	11	<p style="text-align: center;"><b>CONDUCTOR, GENERAL SYMBOL.</b></p> <p>Note:- The thickness of the line indicates the importance of the circuit.</p>	
4-1	13	<b>CROSSING OF CONDUCTORS WITHOUT CONNECTION</b>	
4-2	15	<p style="text-align: center;"><b>TAPPINGS.</b></p> <p>Note:- Separate points for each tapping.</p>	
4-21	16	<p style="text-align: center;"><b>COMMON POINT.</b> (Indicates that several similar circuits are connected with a common source).</p>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
5		ALTERNATIVE CIRCUIT CONNECTIONS. EXAMPLES.	
6		JUMPER.	
7	12	BOUNDARY LINE.	
8		U-LINK.	
9-1		U-POINT (JACKING-IN POINT).  Example of use 	
9-2		U-POINT FOR ROUTINER ACCESS.  Example of use 	
10	33	INSULATION.  Note:- Hatching to be employed only where it is essential to avoid confusion.	
11	17	EARTH.	
12	161	PRIMARY CELL OR ACCUMULATOR.  Note:- The long line represents the Positive Pole and the short line the Negative Pole.	
12-1	162	BATTERY OF PRIMARY CELLS OR ACCUMULATORS.  Note:- Voltage to be shown where necessary. Example 	
12-2	163	BATTERY OF ACCUMULATORS WITH SINGLE END-CELL SWITCH.	
13	171	VOLTMETER	
14	172	AMMETER	




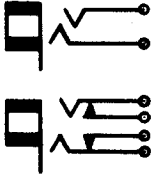
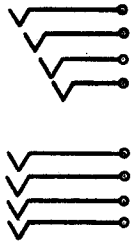







No.	I.E.C. No.	DESCRIPTION	SYMBOL
15	173	FREQUENCY-METER.	
16	174	OHMMETER.	
17	175	WAVEMETER.	
18	176	GALVANOMETER. GENERAL SYMBOL.	
18.1	177	DIFFERENTIAL.	
19	31	VARIABILITY, GENERAL SYMBOL.	
20	32 <sup>†</sup>	SLIDING CONTACT. <i>Note:-The first alternative to be used internationally</i>	
		<i>Examples of use</i>	
		1. 	
		2. 	
21	51	TERMINAL OR CONNECTION GENERAL SYMBOL.	
21.1	52	PERMANENT CONNECTION	
21.2	53	REMOVABLE CONNECTION <i>e.g. I.D.F. Jumper.</i>	
23	34	SCREEN	
24		SCREENED CONDUCTOR	
25	44	IMPEDANCE, REACTIVE OR NON-REACTIVE GENERAL SYMBOL, (including Resistance or Resistor)	
25.1	44.1	VARIABLE RESISTOR	



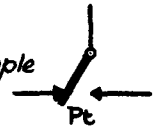
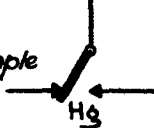




No.	I.E.C. No.	DESCRIPTION	SYMBOL
25-11	44.2 <sup>†</sup>	<b>IMPEDANCE, REACTIVE OR NON-REACTIVE COMPONENT</b> <b>RESISTOR WITH SLIDING CONTACT ADJUSTMENT OR POTENTIOMETER.</b> <i>Note:- The first alternative to be used internationally.</i>	
25-2	45	<b>NON-REACTIVE RESISTOR.</b>	
25-21	45-1	<b>NON-REACTIVE RESISTOR WITH SLIDING CONTACT ADJUSTMENT.</b>	
25-3	46	<b>BALLAST RESISTOR (BARRETTOR).</b>	
25-31		<b>BALLAST RESISTOR (BARRETTOR) WITH TWO FILAMENTS.</b>	
26	41	<b>CAPACITANCE OR CONDENSER. GENERAL SYMBOL.</b>	
26-1	41.1	<b>VARIABLE.</b>	
26-11	41-2	<b>VARIABLE DIFFERENTIAL.</b>	
26-2	42	<b>ASYMMETRICAL.</b>	
26-3		<b>THREE-PLATE.</b>	
26-4		<b>TWO-PLATE WITH INHERENT RESISTANCE.</b>	
26-41		<b>THREE-PLATE WITH INHERENT RESISTANCE.</b>	
26-5	43	<b>ELECTROLYTIC.</b> <i>Note:- The + and - signs may be omitted if no ambiguity as to polarity will result.</i>	



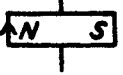
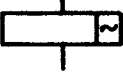


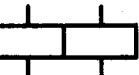
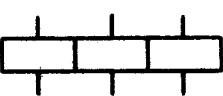
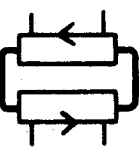
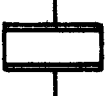
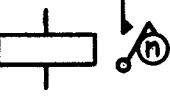
No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>INDUCTANCE OR INDUCTOR.</b>			
27	47	GENERAL SYMBOL.	
27.1	47.1	VARIABLE.	
27.11	47.2 <sup>†</sup>	VARIABLE, WITH SLIDING CONTACT ADJUSTMENT. <i>Note:- The first alternative to be used internationally.</i>	
27.2	48	WITH IRON CORE.	
<b>TRANSFORMER, WITH AIR CORE.</b>			
28	* 131 <sup>†</sup>	GENERAL SYMBOL.	
28.1	133 <sup>†</sup>	WITH THREE WINDINGS.	
28.2	134	DIFFERENTIAL.	
28.3	135 <sup>†</sup>	VARIABLE.	
28.4	140	AUTOTRANSFORMER.	
<b>TRANSFORMER WITH IRON CORE.</b>			
29	* 136 <sup>†</sup>	GENERAL SYMBOL.	
29.1	139 <sup>†</sup>	SCREENED.	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
30-1	55	<b>PRESS-BUTTON.</b> <i>MAKE.</i>	
30-2	56	<i>BREAK.</i>	
30-3	57	<i>BREAK AND MAKE.</i>	
31-1	60	<b>SWITCH.</b> <i>SINGLE-POLE WITH TWO POSITIONS.</i>	
31-11	61	<i>SINGLE-POLE WITH SEVERAL POSITIONS.</i>	
31-2	62	<i>DOUBLE-POLE WITH TWO POSITIONS.</i>	
32-1	81 <sup>†</sup>	<b>KEY.</b> <i>NON-LOCKING (EXAMPLE).</i>	
32-2	82 <sup>†</sup>	<i>LOCKING (EXAMPLE).</i>	
32-21		<i>LOCKING, MAKE BEFORE BREAK (EXAMPLE).</i>	
32-3	83 <sup>†</sup>	<i>THREE-POSITION (EXAMPLE).</i>	

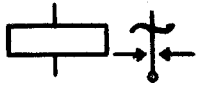












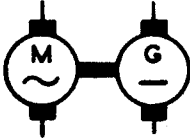





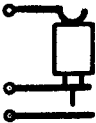
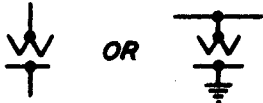
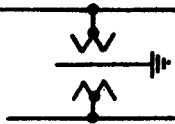

No.	I.E.C. No.	DESCRIPTION	SYMBOL
32.4	701	<p><b>KEY, CONTD.</b></p> <p><i>MORSE.</i> (See also symbol No. 30.3).</p>	
33.1	71	<p><b>JACK.</b></p> <p><i>SIMPLIFIED SYMBOL OF SLEEVE (BUSH) OF JACK.</i></p>	
33.2	72	<p><i>SPRING.</i></p>	
33.3	73	<p><i>WITH SPRINGS (EXAMPLES.)</i></p>	
33.4		<p><b>MULTI-POINT.</b></p> <p><i>Note:- In certain circumstances, e.g. for convenience of diagram layout, the individual jack springs may be shown detached.</i></p>	
34.1	* 74	<p><b>PLUGS.</b></p> <p><i>Note:- The longest line represents the tip, the shortest the sleeve.</i></p>	
34.2	* † 75	<p><b>PLUG, FOUR-WAY.</b></p>	
35	76	<p><b>PLUG AND SOCKET, TWO-WAY.</b></p>	
36.1	* 54	<p><b>RELAY CONTACTS. (EXAMPLES.)</b></p> <p><i>BREAK.</i></p>	
36.2		<p><i>MAKE.</i></p>	
36.3		<p><i>MAKE BEFORE BREAK.</i></p>	
36.4		<p><i>BREAK AND MAKE.</i></p>	

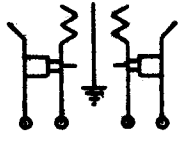
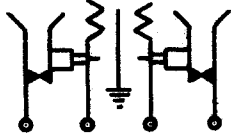
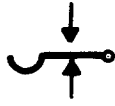










No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>RELAY CONTACTS. (CONTD.)</b>			
36-5		<b>CONTACT OPERATED PREVIOUS TO REMAINING CONTACT UNITS ON SAME RELAY.</b>	∞
		Example	
			
36-6		<b>CONTACT OPERATED AFTER REMAINING CONTACT UNITS ON SAME RELAY.</b>	y
		Example	
			
36-7		<b>PLATINUM CONTACT.</b>	Pt
		Example	
			
36-8		<b>MERCURY CONTACT.</b>	Hg
		Example	
			
<b>RELAY COILS.</b>			
37	201 <sup>†</sup>	<b>GENERAL SYMBOL.</b>  <i>Note:- 1. The resistance in ohms of the winding to be inserted in the rectangle if necessary.</i>  <i>Note:- 2. The points at which current enters and leaves relay may be shown on the same side of the coil.</i>	
		Example	
			
37-1	203	<b>SLOW RELEASING.</b>  <i>Note:- In the previous issue of this specification this symbol was used for slow operating.</i>	
37-11	203-1	<b>VERY SLOW RELEASING.</b>  <i>Note:- May be used for thermal relays etc.</i>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
37.2	204	<p><b>RELAY COILS. (CONTD.)</b></p> <p><b>SLOW OPERATING.</b></p> <p><i>Note:- In previous issues of this specification this symbol was used for slow releasing.</i></p>	
37.21	204.1	<p><b>VERY SLOW OPERATING.</b></p> <p><i>Note:- May be used for thermal relays etc.</i></p>	
37.3	205	<p><b>POLARISED.</b></p> <p><i>Note:- Arrow indicates direction of current to operate relay.</i></p>	
37.4	206	<p><b>ALTERNATING-CURRENT.</b></p> <p><i>Note:- Frequency to be indicated if required.</i></p> <p style="text-align: right;"><i>Example</i></p>	 
37.5	207	<p><b>UNAFFECTED BY ALTERNATING CURRENT.</b></p>	
37.6	208	<p><b>WITH TWO WINDINGS.</b></p>	
37.7		<p><b>WITH THREE WINDINGS.</b></p>	
37.8		<p><b>SHUNT FIELD.</b></p> <p><i>Note:- With current in direction of arrows the relay does not operate. The reversal of either current causes the relay to operate.</i></p>	
37.9		<p><b>HIGH IMPEDANCE.</b></p>	
38	351.1	<p><b>METER OR MESSAGE REGISTER, DETAILED SYMBOL.</b></p> <p><i>Note:- The coil may be shown in accordance with one of the symbols for relay coils.</i></p>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>INDICATOR</b>			
39	* + 221	<b>GRID OR FLAG-TYPE, GENERAL SYMBOL.</b> <i>Note:- The appropriate relay coil symbol may be associated.</i>	
39-1	* + 222	<b>GRID OR FLAG-TYPE WITH ALARM CONTACT.</b> <i>Note:- 1. The appropriate relay coil symbol may be associated.</i> <i>Note:- 2. If desired the contact may be shown detached.</i>	
<i>Example</i>			
39-2	362	<b>DROP-TYPE.</b> <i>Note:- The coil may be shown in accordance with one of the symbols for relay coils.</i>	
<b>BELL</b>			
40	211	<b>GENERAL SYMBOL.</b>	
40-1	212	<b>DIRECT-CURRENT.</b>	
40-11	213	<b>SINGLE-STROKE.</b>	
40-2	214	<b>ALTERNATING-CURRENT.</b>	
<b>BUZZER</b>			
41	+ 211	<b>GENERAL SYMBOL.</b>	
41-1	+ 212	<b>DIRECT-CURRENT.</b>	
41-2	+ 214	<b>ALTERNATING-CURRENT.</b>	
41-3	215	<b>DETAILED FORM (EXAMPLE)</b> <i>Note:- The coil may be shown in accordance with one of the symbols for relay coils.</i>	
42	223	<b>LAMP (SIGNAL)</b>	









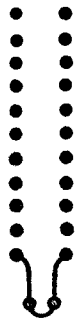
No.	I.E.C. No.	DESCRIPTION	SYMBOL
43		<b>RINGING VIBRATOR.</b> (Pole Reverser or Reed Converter).	
44		<b>RINGING, GENERAL SYMBOL.</b>	
45	151	<b>RINGING GENERATOR (HAND).</b> <b>GENERAL SYMBOL.</b>	
45-1		<b>SERIES TYPE, GENERAL SYMBOL.</b>	
45-2		<b>SHUNT TYPE, GENERAL SYMBOL.</b>	
45-11		<b>SERIES TYPE, DETAILED FORM. (EXAMPLE)</b> <i>Note:- Spring contacts are varied according to circuit requirements.</i>	
45-21		<b>SHUNT TYPE, DETAILED FORM. (EXAMPLE)</b> <i>Note:- Spring contacts are varied according to circuit requirements.</i>	
46		<b>DIRECT-CURRENT GENERATOR.</b>	
47		<b>DIRECT-CURRENT MOTOR.</b>	
48		<b>ALTERNATING-CURRENT GENERATOR.</b>	
49		<b>ALTERNATING-CURRENT MOTOR.</b>	




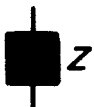








No.	I.E.C. No.	DESCRIPTION	SYMBOL
50		<b>MOTOR-GENERATOR (EXAMPLE)</b>	
51		<b>VOICE-FREQUENCY GENERATOR</b>	
52	† 231	<b>INTERRUPTER</b>	
53	† 101	<b>FUSE (CUT-OUT)</b> <b>GENERAL SYMBOL</b> <i>Note:- The rated current in amperes may be shown.</i>	
53.1	† 103	<b>WITH ALARM CONTACT</b> <i>Example of Alarm Fuse with Bus Bar and Alarm Bar.</i>	
54.1	† 104	<b>HEAT COIL</b> <b>COMPRESSION TYPE</b>	
54.2		<b>BREAK TYPE</b> <i>Example of use</i>	
55	121 122	<b>LIGHTNING PROTECTOR</b> <b>ONE WIRE. GENERAL SYMBOL</b>	
55.1	122.1	<b>BETWEEN TWO WIRES AND EARTH</b>	
55.2	123	<b>VACUUM TYPE</b>	







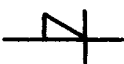




No.	I.E.C. No.	DESCRIPTION	SYMBOL
56		<b>COMBINED HEAT COIL AND PROTECTOR.</b>	
56-1		<b>COMBINED HEAT COIL AND PROTECTOR WITH TESTING FACILITIES.</b>	
57-1		<b>GRAVITY SWITCH</b> <b>SWITCH-HOOK (EXAMPLE)</b> <i>Note:- The contacts are shown in the normal position i.e. with the receiver on the hook.</i>	
57-2		<b>CRADLE SWITCH (EXAMPLE)</b> <i>Note:- The contacts are shown in the normal position i.e. with the microtelephone on the cradle.</i>	
58	181	<b>MICROPHONE OR TELEPHONE TRANSMITTER</b> <b>GENERAL SYMBOL</b>	
58-1	181-4	<b>CARBON TYPE</b>	
58-2	181-3	<b>CONDENSER TYPE</b>	
58-3	181-1	<b>ELECTRO-DYNAMIC TYPE</b>	
58-4	181-2	<b>PIEZO-ELECTRIC TYPE</b>	
58-11		<b>CARBON TYPE, PUSH-PULL</b>	
59	191	<b>TELEPHONE RECEIVER</b> <b>GENERAL SYMBOL</b>	
59-1	191-1	<b>CONDENSER TYPE</b>	
59-2	191-2	<b>ELECTRO-DYNAMIC TYPE</b>	

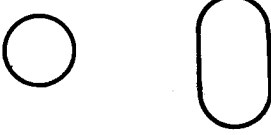


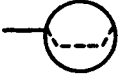





No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>TELEPHONE RECEIVER (CONTD.)</b>			
59-3	191.3	THERMAL TYPE.	
59-4		PIEZO-ELECTRIC TYPE.	
59-5		BELL TYPE.	
60	194	MICROTELEPHONE.	
61		IMPULSING SPRINGS.	
<b>MECHANICALLY-OPERATED CONTACTS.</b>			
<i>Note:- The rectangle represents the moving contact.</i>			
62-1		BREAK.	
62-2		MAKE.	
62-3		MAKE BEFORE BREAK.	
62-4		BREAK AND MAKE.	
<b>DIAL.</b>			
63-1	241	SIMPLIFIED FORM.	
63-2	241.1 <sup>†</sup>	IMPULSING CONTACTS.	
63-3	241.3 <sup>*</sup>	DETAILED FORM. (EXAMPLE)	
<i>Note:- The Off Normal (O.N.) contacts may be shown detached.</i>			


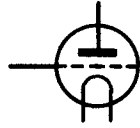
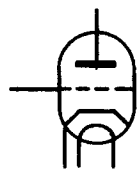
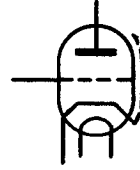
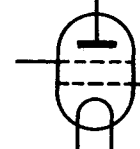
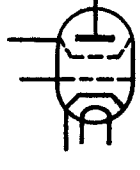







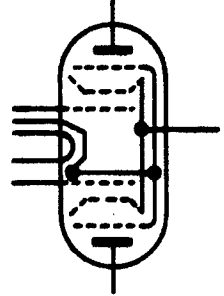
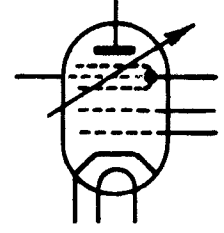
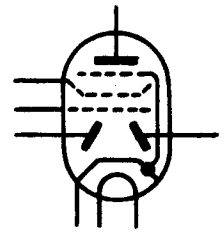
No.	I.E.C. No.	DESCRIPTION	SYMBOL
64-1	*† 373	<b>UNISELECTOR.</b> <i>NON-BRIDGING WIPER AND BANK.</i>	
64-2		<i>BRIDGING WIPER AND BANK</i>	
64-11	*† 377	<i>NON-BRIDGING WIPERS PASSING CONSECUTIVELY OVER TWO ARCS OF THE BANK.</i>	
64-3		<i>HOMING ARC AND BRIDGING WIPER</i> <i>Note:- Indicates that a double metal segment homing arc is used.</i>	
64-31		<i>HOMING ARC AND BRIDGING WIPER</i> <i>Note:- Indicates that,</i> <i>(i) The bank contacts are commoned, or</i> <i>(ii) A solid metal segment is used.</i>	
65-1	*† 376	<b>TWO-MOTION SELECTOR</b> <i>NON-BRIDGING WIPER AND BANK</i>	
65-2		<i>BRIDGING WIPER AND BANK</i>	
65-3		<i>AUXILIARY SCREW ARC AND WIPERS</i>	
65-4		<i>VERTICAL BANK AND WIPERS</i>	



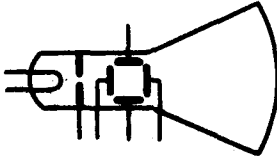
No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>SELECTOR MAGNET.</b>			
66	251	<b>GENERAL SYMBOL.</b>	
66.1		<b>VERTICAL.</b>	
66.2		<b>ROTARY.</b>	
66.3		<b>RELEASE.</b>	
		<i>Note:- When contacts are operated as a result of the energization of the magnet, the number of contact units should be indicated below the magnet letter.</i>	
66.4		<b>UNISELECTOR MAGNET.</b>	
		<i>Note:- <math>\frac{JH50}{4}</math> indicates that the selector is used as a Junction Hunter and has 50 outlets using four wipers or four pairs of wipers as determined by the symbol used for the uniselector.</i>	
<b>LOUDSPEAKER</b>			
67	192	<b>GENERAL SYMBOL.</b>	
67.1	192.2	<b>CONDENSER TYPE.</b>	
67.2	192.1	<b>ELECTRO-DYNAMIC TYPE.</b>	
		<i>Note:- Where the field is energised electrically it will be shown by the inductance symbol 27.2</i>	<i>Example</i>  
67.3	192.4	<b>THERMAL TYPE.</b>	
67.4	192.3	<b>PIEZO-ELECTRIC TYPE.</b>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
68	193	<b>GRAMOPHONE PICK-UP.</b> GENERAL SYMBOL.	
68/1		ELECTRO-MAGNETIC TYPE.	
68/11		ELECTRO-MAGNETIC TYPE, WITH HUM SUPPRESSOR.	
68/2		PIEZO-ELECTRIC TYPE.	
69		<b>GRAMOPHONE RECORDER.</b> GENERAL SYMBOL.	
69/1		ELECTRO-DYNAMIC TYPE	
70	261	ELEMENT WITH NON-LINEAR CHARACTERISTIC (GENERAL SYMBOL).	
71	262	ELEMENT WITH ASYMMETRICAL CONDUCTIVITY (RECTIFIER) GENERAL SYMBOL. <i>Note:- The direction of higher conductivity (forward direction) is from triangle to plate.</i>	
72/1	301	<b>THERMO-COUPLE.</b> INDIRECTLY-HEATED.	
72/2	302	DIRECTLY-HEATED.	
73	303	PIEZO-ELECTRIC CRYSTAL.	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>VALVES, COMPONENTS AND EXAMPLES.</b>			
74	281	<p><b>VACUUM OR GAS-FILLED ENVELOPE.</b></p> <p><i>Note:- When the envelope is gas-filled, either the chemical symbol of the gas or the letter "g" should be shown adjacent to the envelope.</i></p> <p><i>Note:- In the following symbols for elements the envelope is included for clearness.</i></p>	
75	282	<b>ANODE.</b>	
76	283	<b>GRID.</b>	
77	283.1	<b>SCREEN GRID.</b>	
78	285	<p><b>FILAMENT, DIRECTLY-HEATED CATHODE.</b></p> <p><b>CATHODE.</b></p>	
79.1	287	<b>SOLID.</b>	
79.2	286	<b>INDIRECTLY-HEATED.</b>	
79.3	288	<b>METALLIC AND LIQUID.</b>	
79.4		<b>PHOTO-ELECTRIC OR RADIO-ACTIVE.</b>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
		<p><b>VALVES.</b></p> <p><i>Note:-1. Connexions to the electrodes may be shown on either side of the envelope to facilitate drawing.</i></p> <p><i>Note:-2. Symbols for other multi-electrode valves can be built up by combining the symbols for the component parts.</i></p>	
80		DIODE.	
81-1	289	TRIODE.	
81-11		TRIODE, INDIRECTLY-HEATED.	
81-12		TRIODE, INDIRECTLY-HEATED, WITH METALLISED SCREEN ENVELOPE.	
82		TETRODE.	
83-1		SCREENED GRID, INDIRECTLY-HEATED.	
83-11		SCREENED GRID VARIABLE $M\mu(\mu)$ , INDIRECTLY-HEATED.	


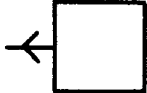

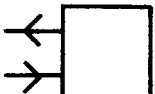
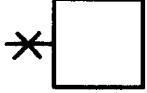
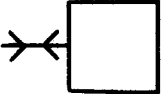



No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>VALVES (CONTD.)</b>			
84	290	<b>PENTODE, INDIRECTLY-HEATED.</b>	
85		<b>HALF-WAVE RECTIFYING VALVE WITH COLD CATHODE.</b>	
86-1		<b>FULL-WAVE RECTIFYING VALVE WITH COLD CATHODE.</b>	
86-2		<b>FULL-WAVE RECTIFYING VALVE, DIRECTLY-HEATED.</b>	
87		<b>PUSH-PULL PENTODE, INDIRECTLY-HEATED.</b>	
88		<b>HEPTODE, VARIABLE <math>\mu</math> (<math>\mu</math>), INDIRECTLY-HEATED.</b>	
89		<b>DOUBLE DIODE PENTODE, INDIRECTLY-HEATED.</b>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
90	304	PHOTOELECTRIC CELL	
91		<p>LAMP FILLED WITH RAREFIED GAS.</p> <p><i>Note:- Either the chemical symbol of the gas or the letter "g" should be shown adjacent to the envelope.</i></p>	
92	305	CATHODE RAY-TUBE (EXAMPLE).	












## SECTION I.




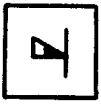


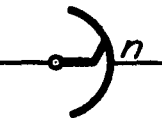
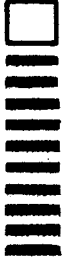

### SYMBOLS COMMON TO TELECOMMUNICATIONS.

(b) FOR USE ON SKELETON DRAWINGS.



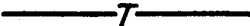
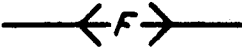
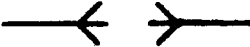



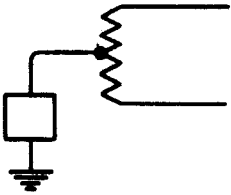

No.	I.E.C. No.	DESCRIPTION	SYMBOL
201	381	EQUIPMENT OR APPARATUS FOR TELECOMMUNICATION. GENERAL SYMBOL.	
202	382	TRANSMITTING EQUIPMENT OR APPARATUS FOR TELECOMMUNICATION. GENERAL SYMBOL.	
203	383	RECEIVING EQUIPMENT OR APPARATUS FOR TELECOMMUNICATION. GENERAL SYMBOL.	
	384	TRANSMITTING AND RECEIVING EQUIPMENT OR APPARATUS FOR TELECOMMUNICATION. GENERAL SYMBOLS.	
204-1		TWO-LINE OR TWO-WAY WORKING	
204-2		DUPLEX WORKING	
204-3		BOTHWAY WORKING	
		ARTIFICIAL LINE	
205	431	GENERAL SYMBOL	
205-1	432	REACTIVE	
206	433	BALANCING NETWORK	

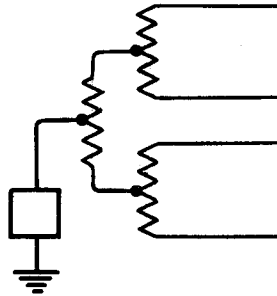
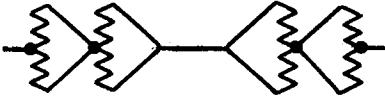

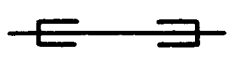


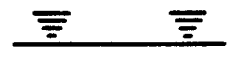
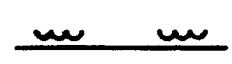
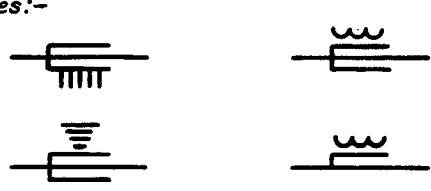
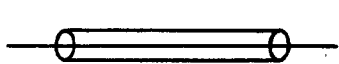


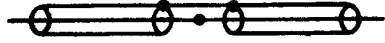
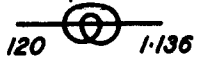











No.	I.E.C. No.	DESCRIPTION	SYMBOL
207	451	<b>FILTER</b> <b>GENERAL SYMBOL</b>	
207-1	452	<b>HIGH-PASS</b>  <i>Note:-Cut off frequency indicated thus.</i>	
207-2	453	<b>LOW-PASS</b>  <i>Note:-Cut-off frequency indicated thus.</i>	
207-3	454	<b>BAND-PASS</b>  <i>Note:-Cut-off frequencies indicated thus.</i>	
207-4	455	<b>BAND-SUPPRESSING</b>  <i>Note:-Cut-off frequencies indicated thus.</i>	
208		<b>ECHO SUPPRESSOR</b> ( <i>See also Symbol No.311-21</i> ).	
209	456	<b>CORRECTING NETWORK</b>	
210	461	<b>FREQUENCY CHANGER</b>	
211	401	<b>RINGING VIBRATOR, GENERAL SYMBOL.</b>	
212	411	<b>AMPLIFYING EQUIPMENT</b>	
213	421	<b>DETECTOR</b> ( <i>Output at Audio-Frequency</i> ).	



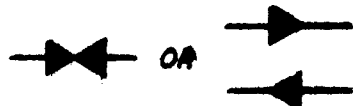
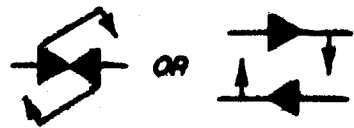


No.	I.E.C. No.	DESCRIPTION	SYMBOL
214	422	<b>AMPLIFIER-DETECTOR</b> <i>Note:- The apex of the triangle indicates the direction of transmission.</i>	
215		<b>MODULATOR.</b>	
216		<b>DEMODULATOR.</b>	
216-1		<b>DEMODULATOR-DETECTOR.</b> <i>(Output at Audio-frequency)</i>	
217	385	<b>TELECOMMUNICATION APPARATUS UNCLASSIFIED.</b> <i>Note:- "a" represents any suitable reference letter which is placed in the square.</i>	
218-1	* † 372	<b>UNISELECTOR. (For Trunking Diagrams.)</b> <b>HOMING TYPE</b>	
218-2	* † 373	<b>NON-HOMING TYPE</b>	
219	* † 376	<b>TWO-MOTION SELECTOR. (For Trunking Diagrams).</b>	
220		<b>RELAY-SET, GENERAL SYMBOL.</b>	

## SECTION I. SYMBOLS COMMON TO TELECOMMUNICATIONS. (C) FOR USE ON PLANS.




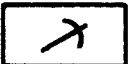




No.	I.E.C. No.	DESCRIPTION	SYMBOL
301	481	<p><b>TELECOMMUNICATION, GENERAL SYMBOL.</b></p> <p><i>Note:- The thickness of the line indicates the importance of the circuit.</i></p> <p><b>ROUTE OR CIRCUIT.</b></p>	
302-1	482	<p><b>TELEPHONE</b></p> <p><i>Note:- Details of the circuit should be placed under the line.</i></p>	
302-2	483	<p><b>TELEGRAPH</b></p> <p><i>Note:- Details of the circuit should be placed under the line.</i></p>	
302-3	484	<p><b>RADIO</b></p> <p><i>Note:- To specify a radio telephony circuit insert F. To specify a radio telegraphy circuit T.</i></p> <p style="text-align: center;"><i>Example</i></p> <div style="text-align: center;">  </div>	
303-1	561	<p><b>CIRCUIT</b></p> <p><b>SINGLE-WAY</b></p>	
303-2	562	<p><b>BOTHWAY</b></p>	
303-2a	563	<p><b>USED FOR WORKING IN BOTH DIRECTIONS SIMULTANEOUSLY (IN TELEGRAPHY, DUPLEX)</b></p>	
304-1	541	<p><b>PHANTOM</b></p> <p><i>Example of circuit to which symbol refers:-</i></p> <div style="text-align: center;">  </div>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
3042	542	<p><b>CIRCUIT (CONTD.)</b>  <b>DOUBLE PHANTOM.</b>                      Example of circuit to which symbol refers:-</p> 	
<b>LINE</b>			
305/1	491	<b>OPEN WIRE</b>	
3052	492	<b>IN CABLE WITH METAL SHEATH</b>	
3053	493	<b>IN CABLE WITHOUT METAL SHEATH</b>	
305/1	494	<b>AERIAL</b>	
3054	495	<b>UNDERGROUND</b>	
3055	496	<b>SUBMARINE</b>	
<p>Note:- 1. Generally the symbols are placed only at the ends of the line.</p>			
<p>Note:- 2. The symbols may be combined as necessary.</p>			
<p>Examples:-</p>			
			
306/1	521	<b>CONCENTRIC CABLE OR TUBULAR FEEDER.</b>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
306-2521-1		<p><b>JUNCTION OF TWO CONCENTRIC CABLES OR TUBULAR FEEDERS.</b></p>	
307	<p>501 * 502</p>	<p><b>LOADING-COIL, GENERAL SYMBOL.</b>  <i>Example of use</i>    <i>Note:- The figures indicate the inductance in mH and the spacing in miles respectively.</i></p>	
308	511	<p><b>CONTINUOUS LOADING.</b>  <i>Example of use</i>    <i>Note:- The inductance in mH per unit length may be specified.</i></p>	
309	551	<p><b>TESTING-POINT.</b>  <b>GENERAL SYMBOL.</b></p>	
309-1		<p><b>TEST-OFFICE OR HUT.</b>  <i>Example of use</i>   } Circuits led in.  Circuits not led in.</p>	
309-2		<p><b>TEST-BOX ON POLE.</b>  <i>Example of use</i>   } Circuits led in.  Circuits not led in.</p>	
310		<p><b>AMPLIFIER.</b>  <i>Note:- The apex of the triangle indicates the direction of transmission.</i></p>	
311-1	581	<p><b>REPEATER.</b>  <b>TWO-WIRE</b></p>	
311-11	583	<p><b>TWO-WIRE WITH SIGNALLING EQUIPMENT FOR SUBAUDIO-FREQUENCY.</b></p>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
311-2	591 * 592	<p><b>REPEATER (CONTD.)</b>  <b>FOUR-WIRE.</b></p> <p>Note:-1.  is used where the two circuits "Go" and "Return" are separately indicated.</p> <p>Note:-2. The symbol  will be used when amplification is provided in only one direction of transmission on a four-wire circuit.</p>	
311-2/1	593	<p><b>FOUR-WIRE WITH ECHO SUPPRESSOR.</b>            See also Symbol No.208.</p>	
312-1	571	<p><b>TERMINATING SET.</b>  <b>SIMPLIFIED SYMBOL.</b></p>	
312-2	571.1	<p><b>WHERE THE TWO CIRCUITS ARE SEPARATELY INDICATED.</b></p>	



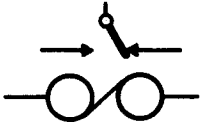
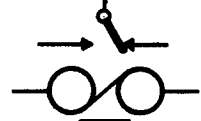
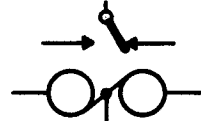


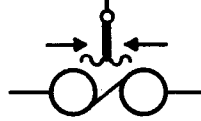
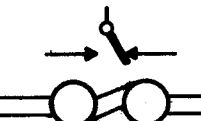

## SECTION 2 . SYMBOLS PARTICULAR TO TELEPHONY.

No.	I.E.C. No.	DESCRIPTION	SYMBOL
		<b>TELEPHONE EXCHANGE.</b>	
401	391	GENERAL SYMBOL	
401-1	661	LOCAL BATTERY	
401-2	662	CENTRAL BATTERY	
401-3	663	AUTOMATIC	
		<b>SUBSCRIBERS SET.</b>	
402	651	GENERAL SYMBOL	
402-1	652	LOCAL BATTERY	
402-2	653	CENTRAL BATTERY	
402-3	654	AUTOMATIC	
403		<b>TELEPHONE</b> ( <i>General Symbol for use on plans.</i> )	<b>T</b>

## SECTION 3.

### SYMBOLS PARTICULAR TO TELEGRAPHY.

(a) FOR USE ON CIRCUIT DIAGRAMS.

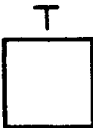







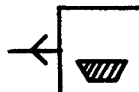
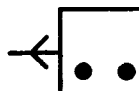
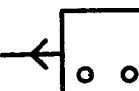
No.	I.E.C. No.	DESCRIPTION	SYMBOL
501	712	<b>MULTIPLEX DISTRIBUTOR.</b> <i>Note:- The number of arcs corresponds to the number of channels.</i>	
502	711	<b>DISTRIBUTOR, BRUSH AND RING.</b>	
<b>RELAY, TELEGRAPH</b>			
503	721	<b>GENERAL SYMBOL</b>	
503-1	722	<b>POLARISED</b>	
503-2	723	<b>DIFFERENTIAL</b>	
503-3	724	<b>BIASSED</b>	
503-4	725	<b>NEUTRAL ADJUSTMENT</b>	
503-5	726	<b>WITH THREE POSITIONS</b>	
503-6	727	<b>WITH SEVERAL WINDINGS</b>	
503-7	728	<b>VIBRATING</b>	

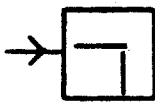
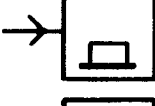
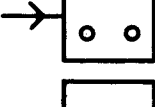
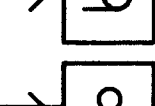

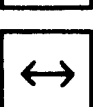










## SECTION 3.

### SYMBOLS PARTICULAR TO TELEGRAPHY.

(b) FOR USE ON SKELETON DRAWINGS.

No.	I.E.C. No.	DESCRIPTION	SYMBOL
		<b>TELEGRAPH APPARATUS</b>	
601	751	GENERAL SYMBOL	<div style="text-align: center;">T</div> 
601-1	752	MORSE	
601-2	753	HUGHES	
601-3	754	BAUDOT <i>Note:- If required, <math>\underline{n}</math> designates the number of selectors.</i>	
601-4	755	SIEMENS	
601-5	756	TELEPRINTER	
601-6	757	PHOTOTELEGRAPH (Facsimile)	
601-7	758	WHEATSTONE	
		<b>TELEGRAPH TRANSMITTER</b>	
602-1	761	KEY	
6022	762	KEYBOARD	
6023	763	TAPE	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
603-1	771	<b>TELEGRAPH RECEIVER. SOUNDER</b>	
603-2	772	<b>TELEPHONE</b>	
603-3	773	<b>PERFORATING</b>	
603-4	774	<b>TAPE PRINTING</b>	
603-5	775	<b>COLUMN PRINTING</b>	
604	781	<b>TELEGRAPH REPEATER GENERAL SYMBOL</b>	
604-1	782	<b>SIMPLEX</b>	
604-2	783	<b>DUPLEX</b>	
604-3	784	<b>DOUBLE-CURRENT</b>	
604-4	785	<b>ROTATING DUPLEX</b>	
604-5	786	<b>REGENERATIVE</b>	
605-1	791	† <b>TELEGRAPH EQUIPMENT AUDIO-FREQUENCY</b>	
605-2	792	† <b>SUPERAUDIO-FREQUENCY</b>	
605-3	793	† <b>SUBAUDIO-FREQUENCY</b>	




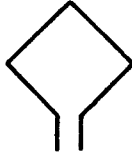
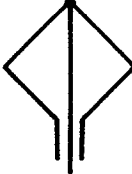



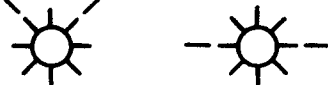
### SECTION 3. SYMBOLS PARTICULAR TO TELEGRAPHY. (C) FOR USE ON PLANS.

No.	I.E.C. No.	DESCRIPTION	SYMBOL
		<b>TELEGRAPH INSTALLATION.</b>	
701-1	801	<i>DUPLEX, DIFFERENTIAL.</i>	
701-11	802	<i>DUPLEX, BRIDGE.</i>	
701-2	803	<i>IN ECHELON.</i>	
701-21	804	<i>IN ECHELON, INTERMEDIATE STATION.</i>	
701-22	805	<i>IN FORKED ECHELON.</i>	
		<b>TELEGRAPH CIRCUIT.</b>	
702-1	811	<i>SINGLE-CURRENT.</i>	
702-2	812	<i>DOUBLE-CURRENT.</i>	
702-3	813	<i>AUDIO-OR VOICE-FREQUENCY.</i>	
702-4	814	<i>SUPERAUDIO-FREQUENCY.</i>	
702-5	815	<i>SUBAUDIO-FREQUENCY.</i>	
703		<i>UNDULATOR</i>	

## SECTION 4.

### SYMBOLS PARTICULAR TO RADIOCOMMUNICATION.







(a) FOR USE ON CIRCUIT DIAGRAMS.




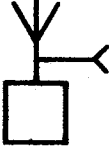
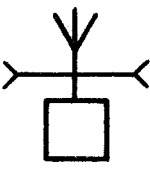

No.	I.E.C. No.	DESCRIPTION	SYMBOL
801	921	<b>AERIAL OR ANTENNA.</b> <b>GENERAL SYMBOL.</b>	
801-1	921.1	<b>TRANSMITTING</b>	
801-2	921.2	<b>RECEIVING</b>	
801-3	931	<b>FRAME</b>	
801-31	932	<b>BALANCED FRAME.</b>	
802	901	<b>COUNTERPOISE.</b>	
803	902	<b>SPARK-GAP.</b> <b>GENERAL SYMBOL.</b>	
803-1	903	<b>MULTIPLE</b>	
8032	904	<b>ROTARY</b>	

## SECTION 4.

### SYMBOLS PARTICULAR TO RADIOCOMMUNICATION.

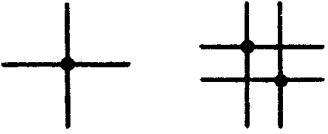

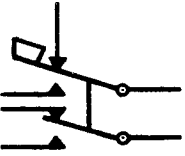
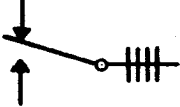





#### (C) FOR USE ON PLANS.




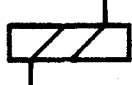
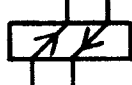






No.	I.E.C. No.	DESCRIPTION	SYMBOL
		<b>RADIO STATION</b> <i>Note:- Insert T and/or F in square to indicate telegraph and/or telephone station.</i>	
901	941	<b>GENERAL SYMBOL</b>	
901-1	942	<b>TRANSMITTING</b>	
901-2	943	<b>RECEIVING</b>	
901-3	944	<b>TRANSMITTING AND RECEIVING</b>	
901-4	956	<b>RADIO BEACON</b>	
901-5	955	<b>DIRECTION FINDING (RADIO GONIOMETRIC)</b>	

No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>RADIO STATION (CONTD.)</b>			
901-6	957	<i>DIRECTIONAL, TRANSMISSION IN ONE FIXED DIRECTION.</i>	
901-6/	957-1	<i>DIRECTIONAL, TRANSMISSION IN TWO FIXED DIRECTIONS</i>	
901-62	958	<i>VARIABLE DIRECTIONAL TRANSMISSION</i>	
901-7	959	<i>DIRECTIONAL, RECEPTION IN ONE FIXED DIRECTION.</i>	
901-7/	959-1	<i>DIRECTIONAL, RECEPTION IN TWO FIXED DIRECTIONS.</i>	
901-72	960	<i>VARIABLE DIRECTIONAL RECEPTION.</i>	



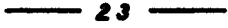
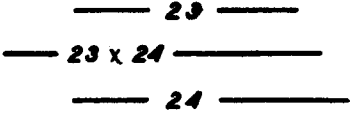

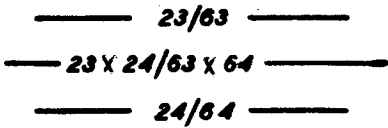


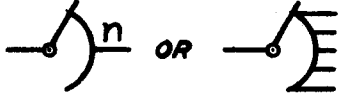
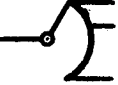
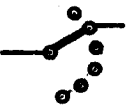
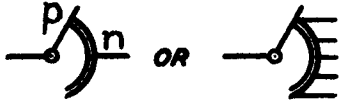
# APPENDIX


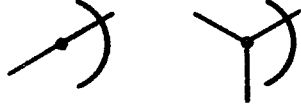


## I.E.C. SYMBOLS NOT SHOWN IN THE MAIN LIST OF BRITISH STANDARD SYMBOLS.

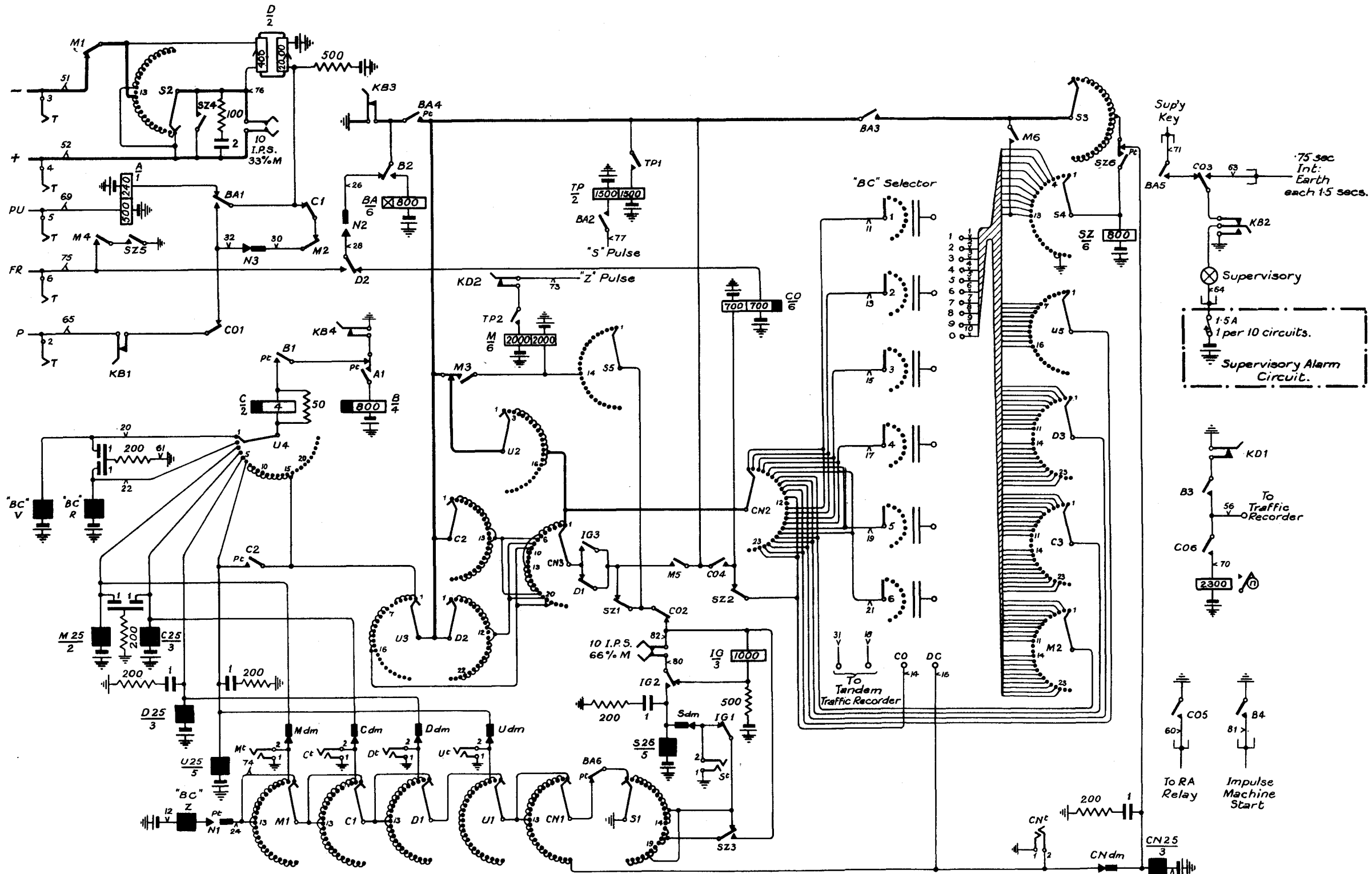
B.S.I. No.	I.E.C. No.	DESCRIPTION	SYMBOL
	14	CROSSING OF CONDUCTORS WITH CONNECTION.	
36-1	54	RELAY CONTACT. <i>Note:- Agreed alternative used by German Administration.</i>	
	58	SWITCH WITH TWO ARMS.	
	59	MULTIPLE ARM. <i>Note:- The number of strokes represents the number of arms.</i>	
		FUSE (CUT-OUT)	
53	101	GENERAL SYMBOL.	
	102	BRANCH.	
53-1	103	WITH ALARM CONTACT.	
54-1 54-2	104	HEAT COIL.	
34-2	75	OPERATOR'S PLUG, FOUR-WAY AND TWO-WAY.	

B.S.I. No.	I.E.C. No.	DESCRIPTION	SYMBOL
28	131	TRANSFORMER, GENERAL SYMBOL.	
	132	TRANSFORMER. <i>Note:- For use when the two wires are represented by a single line.</i>	
37	201	RELAY COIL. GENERAL SYMBOL. <i>Note:- The line across coil may be omitted and replaced by the resistance in ohms of the winding.</i>	
	202	WITH INDICATION OF DIRECTION OF WINDING.	
	209	DIFFERENTIAL <i>Note:- The arrows indicate the direction of current to operate relay.</i>	
38	351	METER OR MESSAGE REGISTER. GENERAL SYMBOL.	
39-2	361	DROP INDICATOR, GENERAL SYMBOL.	
	441	REGISTER. (AUTO, ROTARY SYSTEM)	
	664	TELEPHONE EXCHANGE AUTO-MANUAL.	
	582	REPEATER, CORD-CIRCUIT.	
	601	VOICE-FREQUENCY RINGING EQUIPMENT.	



B.S.I. No.	I.E.C. No.	DESCRIPTION	SYMBOL
	602	<b>DIALLING (SUBAUDIO-FREQUENCY).</b>	
	603	<b>DIALLING (AUDIO-FREQUENCY).</b>	
	531	<b>PHYSICAL CIRCUIT, TWO-WIRE.</b> <i>Note:- The line should only be broken to show the number of the circuit indicating the cable pair.</i>	
	532	<b>TWO PHYSICAL CIRCUITS, TWO-WIRE AND THEIR PHANTOM CIRCUIT.</b>	
	533	<b>PHYSICAL CIRCUIT, FOUR-WIRE.</b>	
	534	<b>TWO PHYSICAL CIRCUITS, FOUR-WIRE AND THEIR PHANTOM CIRCUIT.</b>	
		<b>SELECTOR.</b>	
	371	<b>GENERAL SYMBOL</b>	
	372	<b>WITH HOME POSITION</b>	
216-1	373	<b>UNISELECTOR, SIMPLE FORM.</b>	
	374	<b>UNISELECTOR WITH SEVERAL HOME POSITIONS</b>	
	375	<b>UNISELECTOR, DETAILED FORM.</b>	
217	376	<b>TWO-MOTION SELECTOR, SIMPLE FORM.</b> <i>Note:- "p" indicates the number of levels. "n" indicates the number of contacts per level.</i>	

B.S.I. No.	I.E.C. No.	DESCRIPTION	SYMBOL
<b>SELECTOR. (CONTD.)</b>			
217	376-1	TWO-MOTION SELECTOR, DETAILED FORM.	
64-11	377	SELECTOR WITH SEVERAL WIPERS.	
63-2	241-1	DIAL, IMPULSING CONTACT.	
63-3	241-2	OFF NORMAL CONTACT.	
41	211	BUZZER.	<p data-bbox="1016 955 1293 1018"><b>BELL SYMBOLS ARE RECOMMENDED.</b></p>



Notes:-  
 1. Jack points 1-32 appear for cross-connexions between part 1 (Relays & Uniselectors) & part 2 (Selector & Translation Field).  
 2. Fuse 3A.1 per circuit.

Busy (KB) + Meter & Time Pulse Disconnect (KD)  
 4 + 2

FIG. 1. SCHEMATIC CIRCUIT DIAGRAM OF DIRECTOR

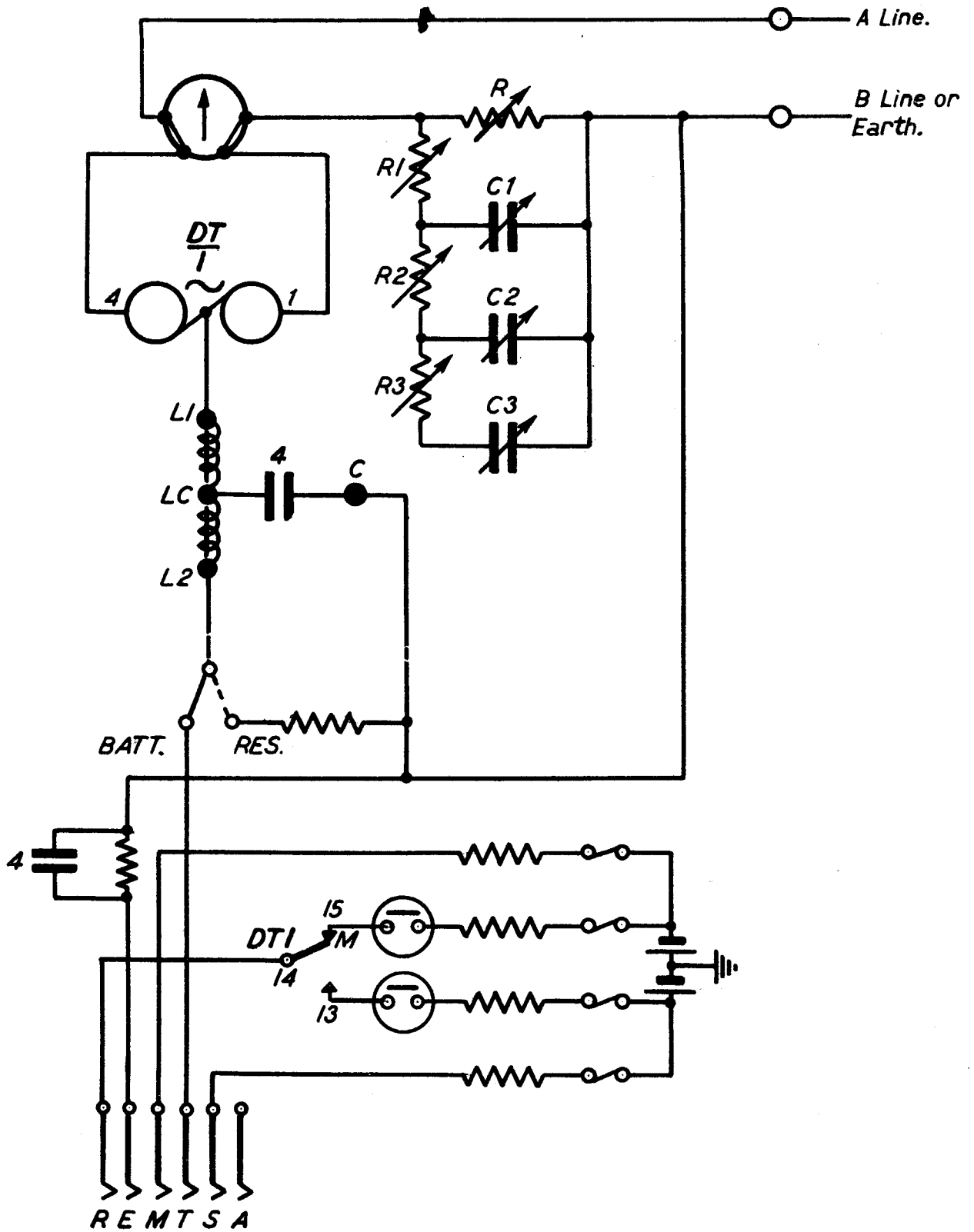
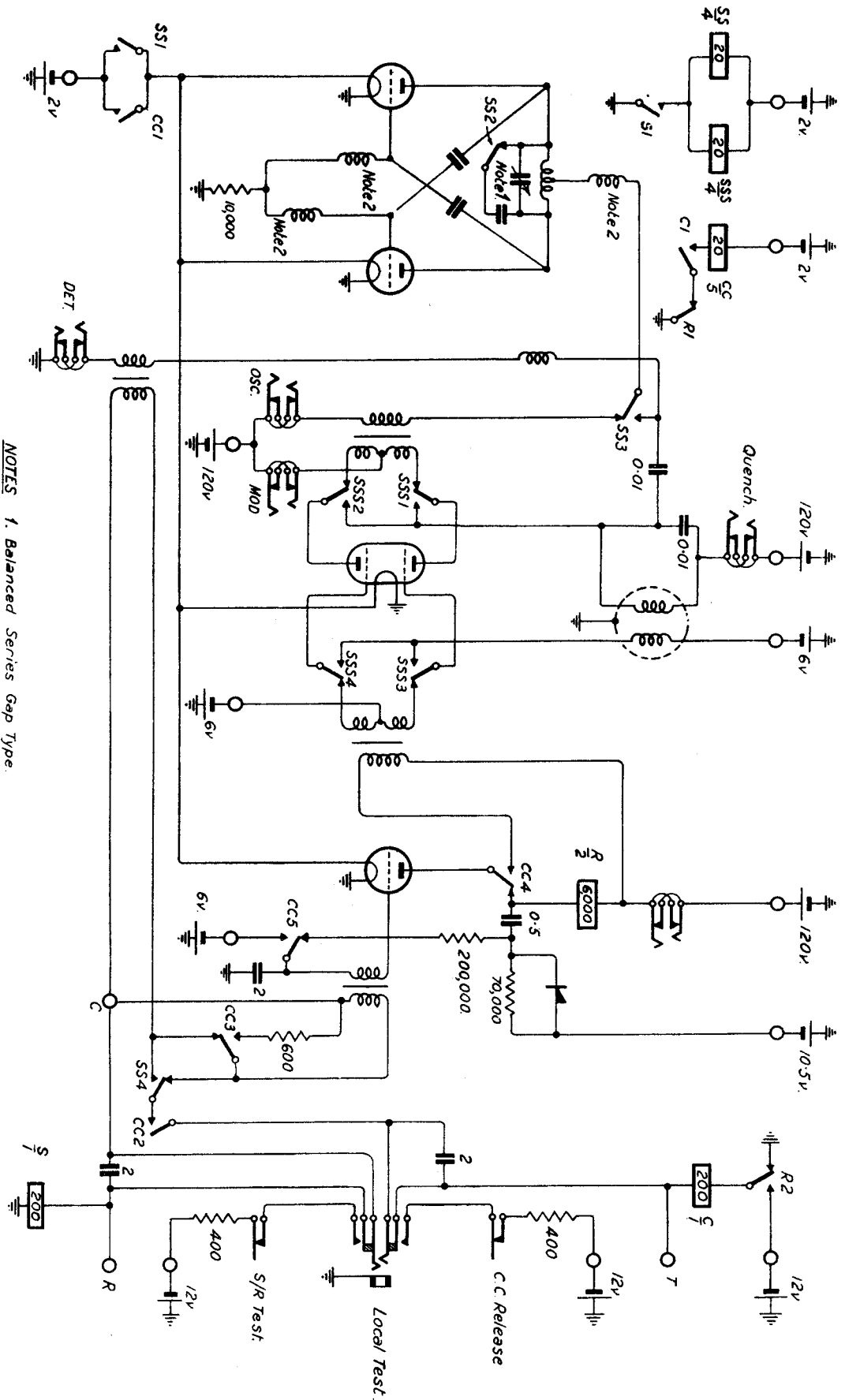


FIG. 2. TELEPRINTER DUPLEX CIRCUIT



NOTES  
 1. Balanced Series Gap Type  
 2. Very High Frequency (V.H.F.) Choke.

FIG. 3. V.H.F. COMBINED TRANSMITTER AND RECEIVER  
 SCHEMATIC DIAGRAM

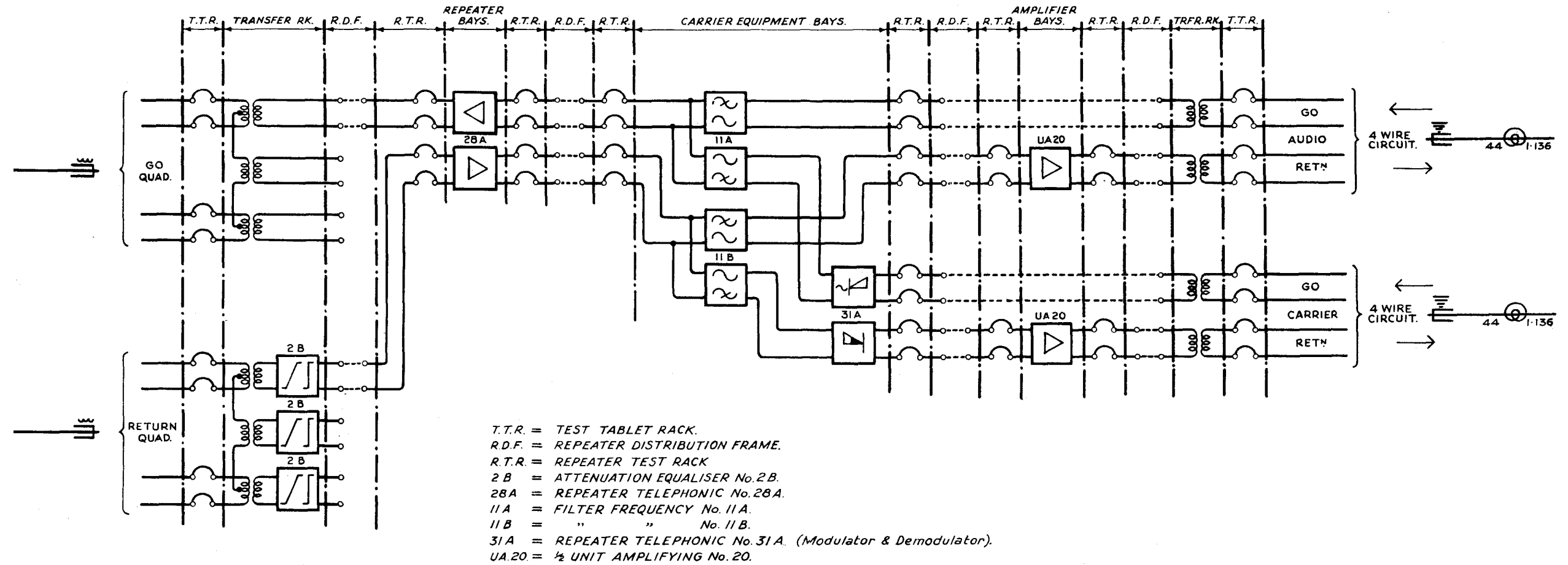


FIG. 4. ARRANGEMENT OF REPEATER AND CARRIER EQUIPMENT

INDEX

Symbol	Page	Symbol	Page	Symbol	Page
Accumulator .. .. .	4	Capacitance, three-plate with		Cradle switch .. .. .	15
Accumulators, battery of ..	4	inherent resistance	6	Crossing of conductors with	
" " " " with		two-plate with		connection	39
single end-cell switch ..	4	inherent resistance	6	" " " " without	
Aerial .. .. .	36	variable .. .. .	6	connection	3
" line .. .. .	28	differential	6	Crystal, piezo-electric ..	19
" balanced frame .. .. .	36	Carbon-type microphone ..	15	Current, subaudio frequency	3
" frame .. .. .	36	Cathode .. .. .	20	Cut-out .. .. .	14, 39
" receiving .. .. .	36	Cathode-ray tube .. .. .	23	Demodulator .. .. .	26
" transmitting .. .. .	36	Cathode, indirectly-heated ..	20	Demodulator-detector ..	26
Alarm fuse .. .. .	14, 39	" metallic and liquid	20	Detector .. .. .	25
Alternating current .. .. .	3	" photo-electric .. .. .	20	" amplifier- .. .. .	26
" " bell .. .. .	12	" radio-active .. .. .	20	" demodulator- .. .. .	26
" " buzzer .. .. .	12	" solid .. .. .	20	Dial .. .. .	16, 42
" " generator	13	Cell, photoelectric .. .. .	23	" .. .. .	41
" " motor .. .. .	13	" primary .. .. .	4	" (subaudio-frequency)	41
Alternative circuit connect-		Cells, battery of primary ..	4	Differential galvanometer ..	5
ions .. .. .	4	Central battery telephone		" relay coil .. .. .	40
Ammeter .. .. .	4	exchange .. .. .	31	" transformer .. .. .	7
Amplifier .. .. .	29	Changer, frequency .. .. .	25	Diode valve .. .. .	21
Amplifier-detector .. .. .	26	Circuit .. .. .	27	Direct current .. .. .	3
Amplifying equipment .. .. .	25	" both directions		" bell .. .. .	12
Anode .. .. .	20	simultaneously	27	" buzzer .. .. .	12
Antenna .. .. .	36	" bothway .. .. .	27	" generator .. .. .	13
Apparatus for telecommuni-		" double phantom .. .. .	28	" motor .. .. .	13
cation	24	" phantom .. .. .	27	Distributor, brush and ring	32
Do. receiving	24	" physical .. .. .	41	" multiplex .. .. .	32
Do. transmitting	24	" radio .. .. .	27	Double diode pentode valve	22
Do. transmitting and		" single-way .. .. .	27	" phantom circuit .. .. .	28
receiving	24	" telegraph .. .. .	27, 35	" pole switch .. .. .	8
Do. unclassified	26	" telephone .. .. .	27	Double-current telegraph	
Apparatus, phototelegraph ..	33	Coil, heat .. .. .	14, 39	circuit .. .. .	35
" telegraph .. .. .	33	" loading- .. .. .	29	Drop indicator .. .. .	12, 40
Artificial line .. .. .	24	Coils, relay .. .. .	10, 11,	Duplex telegraph repeater ..	34
Asymmetrical capacitance ..	6		40	Earth .. .. .	4
" condenser .. .. .	6	Column printing telegraph		Echo suppressor .. .. .	25
Audio-telegraph circuit ..	35	receiver .. .. .	34	Electrolytic capacitance ..	6
Automatic subscribers' set ..	31	Combined heat coil and pro-		" condenser .. .. .	6
Autotransformer .. .. .	7	tector .. .. .	15	Electro-dynamic type--	
Auto-manual telephone ex-		Common point .. .. .	3	gramophone recorder	19
change .. .. .	40	Concentric cable .. .. .	28	loudspeaker .. .. .	18
Balanced frame aerial .. .. .	36	Condenser .. .. .	6	microphone .. .. .	15
Balancing network .. .. .	24	" asymmetrical .. .. .	6	telephone receiver .. .. .	15
Ballast resistor .. .. .	6	" electrolytic .. .. .	6	telephone transmitter	15
" " with two filaments	6	" three-plate .. .. .	6	Electro-magnetic type gram-	
Band-pass filter .. .. .	25	" three-plate with		phone pick-up .. .. .	19
Band-suppressing filter ..	25	inherent resist-		Element with asymmetrical	
Barretter .. .. .	6	ance .. .. .	6	conductivity	19
Battery of accumulators ..	4	" two-plate with in-		" " non-linear	
" " " " with single		herent resist-		characteristic	19
end-cell switch	4	" type loudspeaker	18	Equipment for telecommuni-	
" " primary cells ..	4	" " microphone	15	cation .. .. .	24
Baudot telegraph apparatus	24	" " telephone re-		Do. receiving .. .. .	24
Bell .. .. .	12	ceiver .. .. .	15	Do. transmitting .. .. .	24
" type telephone receiver	16	" variable .. .. .	6	Do. transmitting and re-	
" alternating-current ..	12	" differential	6	ceiving .. .. .	24
" direct-current .. .. .	12	Conductor .. .. .	3	Equipment, amplifying ..	25
" single-stroke .. .. .	12	" screened .. .. .	5	" telegraph .. .. .	34
Biased relay .. .. .	32	Conductors, crossing of ..	3	" voice-frequency	
Boundary line .. .. .	4	Connection .. .. .	5	ringing .. .. .	40
Branch fuse .. .. .	39	" permanent .. .. .	5	Exchange, telephone .. .. .	31
Brush and ring distributor ..	32	" removable .. .. .	5	" auto-manual telephone	40
Bush (of jack) .. .. .	9	Connections, alternative cir-		Feeder, tubular .. .. .	28
Buzzer .. .. .	12, 32	cuit .. .. .	4	Filament .. .. .	20
" alternating-current ..	12	Contact, sliding .. .. .	5	Filter .. .. .	25
" direct-current .. .. .	12	Contacts, relay .. .. .	9, 10,	" band-pass .. .. .	25
Cable, concentric .. .. .	28		39	" band-suppressing ..	25
Capacitance .. .. .	6	" mechanically-operated	16	" high-pass .. .. .	25
" asymmetrical .. .. .	6	Continuous loading .. .. .	29	" low-pass .. .. .	25
" electrolytic .. .. .	6	Cord-circuit repeater .. .. .	40	Flag-type indicator .. .. .	12
" three-plate .. .. .	6	Correcting network .. .. .	25	Four-wire repeater .. .. .	30
		Counterpoise .. .. .	36		

Symbol	Page	Symbol	Page	Symbol	Page
Frame aerial .. ..	36	Locking key .. ..	8	Primary cells, battery of ..	4
Frequency changer .. ..	25	Loudspeaker .. ..	18	Protector, lightning .. ..	14
" meter .. ..	5	" condenser type .. ..	18	Push-pull pentode valve .. ..	22
Full-wave rectifying valve ..	22	" electro-dynamic .. ..	18	<b>Radio beacon radio station ..</b>	<b>37</b>
Fuse .. ..	14, 39	" type .. ..	18	" goniometric radio station ..	37
" alarm .. ..	14, 39	" piezo-electric .. ..	18	" route .. ..	27
" branch .. ..	39	" thermal type .. ..	18	" station .. ..	37
" heat coil .. ..	14, 39	Low-pass filter .. ..	25	" " directional .. ..	38
Galvanometer .. ..	5	<b>Magnet, selector .. ..</b>	<b>18</b>	" " direction finding .. ..	37
" differential .. ..	5	" uniselector .. ..	18	" " radio beacon .. ..	37
Gas-filled valve .. ..	20	Mechanically-operated con- .. ..	16	" " radio goniometric .. ..	37
Generator, alternating- .. ..	13	" tacts .. ..	16	" " receiving .. ..	37
" direct-current .. ..	13	Mercury contact (relay) .. ..	10	" " transmitting .. ..	37
" motor .. ..	14	Message register .. ..	11, 40	" " and receiving .. ..	37
" ringing .. ..	13	Metallic and liquid cathode .. ..	20	" " variable direc- .. ..	38
" voice-frequency .. ..	14	Meter .. ..	11, 40	" " tional .. ..	38
Gramophone pick-up .. ..	19	Microphone .. ..	15	Radio-active cathode .. ..	20
Do. electro-magnetic type ..	19	" carbon type .. ..	15	Reactive impedance .. ..	5, 6
Do. piezo-electric type .. ..	19	" carbon type, .. ..	15	Receiver, telephone .. ..	15
Gramophone recorder .. ..	19	" push-pull .. ..	15	" " bell type .. ..	16
" " electro- .. ..	19	" condenser type .. ..	15	" " condenser type .. ..	15
" " dynamic type .. ..	19	" electro-dynamic .. ..	15	" " electro-dynamic .. ..	15
Gravity switch .. ..	15	" type .. ..	15	" " piezo-electric .. ..	16
Grid .. ..	20	" piezo-electric type .. ..	15	" " type .. ..	16
" screen .. ..	20	Microtelephone .. ..	16	" " thermal type .. ..	16
" type indicator .. ..	12	Modulator .. ..	26	Receiving aerial .. ..	36
Half-wave rectifying valve ..	22	Morse telegraph apparatus .. ..	33	" antenna .. ..	36
Heat coil .. ..	14, 39	Motor, alternating-current .. ..	13	" equipment for tele- .. ..	24
Heptode valve .. ..	22	" direct-current .. ..	13	" communication .. ..	24
High-pass filter .. ..	25	Motor-generator .. ..	14	" radio station .. ..	37
Homing-type uniselector .. ..	17, 26	Multi-point jack .. ..	9	Recorder, gramophone .. ..	19
Hughes telegraph apparatus ..	33	Multiple spark-gap .. ..	36	Rectifier .. ..	19
Hut, test- .. ..	29	Multiplex distributor .. ..	32	Regenerative telegraph re- .. ..	34
Impedance .. ..	5, 6	Network, balancing .. ..	24	" peater .. ..	34
Impulsing springs .. ..	16	" correcting .. ..	25	Register (auto-rotary system) ..	40
Indicator .. ..	12	Non - linear characteristic, .. ..	19	Register, message .. ..	11, 40
" drop-type .. ..	12, 40	" element with .. ..	19	Relay, biased .. ..	32
" flag-type .. ..	12	Non-locking key .. ..	8	" coil .. ..	10, 11, 40
" grid-type .. ..	12	Non-reactive impedance .. ..	5, 6	" " differential .. ..	40
Inductance .. ..	7	Ohmmeter .. ..	5	" contact .. ..	9, 10, 39
Inductor .. ..	7	Operator's plug .. ..	39	" set .. ..	26
Installation, telegraph .. ..	35	Pentode valve .. ..	22	" telegraph .. ..	32
Insulation .. ..	4	Perforating telegraph receiver ..	34	Removable connection .. ..	5
Interrupter .. ..	14	Phantom circuit .. ..	27	Repeater .. ..	29, 30
Jack .. ..	9	Photoelectric cell .. ..	23	" cord-circuit .. ..	40
Jacking-in point .. ..	4	Phototelegraph apparatus .. ..	33	" regenerative telegraph ..	34
Jumper .. ..	4	Physical circuit .. ..	41	" rotating duplex tele- .. ..	34
Junction of two concentric .. ..	29	Pick-up, gramophone .. ..	19	" graph .. ..	34
" " " tubular feeders .. ..	29	Do. electro-magnetic type ..	19	" telegraph .. ..	34
Key .. ..	8, 9	Do. piezo-electric type .. ..	19	Ring distributor .. ..	32
" (telegraph transmitter) ..	33	Piezo-electric— .. ..	19	" Ringing .. ..	13
" locking .. ..	8	" crystal .. ..	19	" equipment, voice-fre- .. ..	40
" Morse .. ..	9	" type loudspeaker .. ..	18	" quency .. ..	40
" non-locking .. ..	8	" microphone .. ..	15	" generator .. ..	13
" three-position .. ..	8	" telephone receiver .. ..	16	" vibrator .. ..	13, 25
Keyboard (telegraph trans- .. ..	33	" telephone transmitter .. ..	15	Rotary spark-gap .. ..	36
Lamp filled with rarefied gas ..	23	Platinum contact (relay) .. ..	11	Rotating duplex telegraph .. ..	34
" (signal) .. ..	12	Plug and socket, two-way .. ..	9	" repeater .. ..	27
Lightning protector .. ..	14	Plug, four-way .. ..	9	Route .. ..	27
Line .. ..	28	" operator's .. ..	39	" radio .. ..	27
" artificial .. ..	24	Plugs .. ..	9	" telegraph .. ..	27
" boundary .. ..	4	Point, common .. ..	3	" telephone .. ..	27
Link, U- .. ..	4	" jacking-in .. ..	4	Routiner access, U-point for ..	4
Loading, continuous .. ..	29	" testing- .. ..	29	Screen .. ..	5
Loading-coil .. ..	29	" U- .. ..	4	" grid .. ..	20
" U, for routiner access .. ..	4	Polarised telegraph relay .. ..	32	Screened conductor .. ..	5
Press-button .. ..	8	Primary cell .. ..	4	" grid valve .. ..	21
Primary cell .. ..	4			" transformer .. ..	7



Symbol	Page	Symbol	Page	Symbol	Page
Selector .. ..	40	Telegraph apparatus, Wheatstone .. ..	33	Transformer, variable .. ..	7
" magnet .. ..	18	" circuit .. ..	35	Transmitter, telegraph .. ..	33
" two-motion .. ..	17, 26	" audio-frequency .. ..	35	" telephone .. ..	15
Set, relay- .. ..	26	" double-current .. ..	35	Transmitting aerial .. ..	36
" subscriber's .. ..	31	" single-current .. ..	35	" antenna .. ..	36
" terminating .. ..	30	" subaudio-frequency .. ..	35	" apparatus for telecommuni- " cation .. ..	24
Siemens' telegraph apparatus .. ..	33	" superaudio-frequency .. ..	35	" equipment for telecommuni- " cation .. ..	24
Signal lamp .. ..	12	" undulator .. ..	35	" radio station .. ..	37
Simplex telegraph repeater .. ..	34	" voice-frequency .. ..	35	" and receiving apparatus for " telecommuni- " cation .. ..	24
Single-stroke bell .. ..	12	" equipment, audio-frequency .. ..	34	" and receiving equipment for " telecommuni- " cation .. ..	24
Single-way circuit .. ..	27	" subaudio-frequency .. ..	34	" radio station .. ..	37
Sleeve (of jack) .. ..	9	" superaudio-frequency .. ..	34	" and receiving radio station .. ..	37
Sliding contact .. ..	5	" installation .. ..	35	Triode valve .. ..	21
Socket, plug and .. ..	9	" receiver .. ..	34	Tube, cathode-ray .. ..	23
Solid cathode .. ..	20	" column printing .. ..	34	Tubular feeder .. ..	28
Sounder (telegraph receiver) .. ..	34	" double-current .. ..	34	" feeders, junction of " two .. ..	29
Spark-gap .. ..	36	" perforating .. ..	34	Two-motion selector .. ..	17, 26, 41, 42
" multiple .. ..	36	" tape printing .. ..	34	Two-way plug and socket .. ..	9
" rotary .. ..	36	" relay .. ..	32	U-link .. ..	4
Spring (jack) .. ..	9	" repeater .. ..	34	U-point .. ..	4
Springs, impulsing .. ..	16	" repeater, duplex .. ..	34	U-point for routiner access .. ..	4
" jack with .. ..	9	" repeater, regenerative .. ..	34	Undulator telegraph circuit .. ..	35
Station, radio .. ..	37	" repeater, rotating duplex .. ..	34	Uniselector .. ..	17, 26
Subaudio-frequency—		" repeater, simplex .. ..	34	" (for trunking dia- " grams) .. ..	26
" dialling .. ..	41	" route .. ..	27	" magnet .. ..	18
" telegraph circuit .. ..	35	Telegraph transmitter .. ..	33	Vacuum type valve .. ..	20
" telegraph equipment .. ..	34	Telephone .. ..	31	Valve, diode .. ..	21
Submarine line .. ..	28	" circuit .. ..	27	" double diode pentode .. ..	22
Subscriber's set .. ..	31	" exchange .. ..	31	" full-wave rectifying .. ..	22
Superaudio - frequency—		" exchange, auto- " manual .. ..	40	" gas-filled .. ..	20
" telegraph circuit .. ..	35	" receiver .. ..	15	" half-wave rectifying .. ..	22
" equipment .. ..	34	" route .. ..	27	" heptode .. ..	22
Suppressor, echo .. ..	25	" telegraph receiver .. ..	34	" pentode .. ..	22
Switch .. ..	8, 39	" transmitter .. ..	15	" push-pull pentode .. ..	22
" with two arms .. ..	39	Teleprinter .. ..	33	" screened grid .. ..	21
" cradle .. ..	15	Terminal .. ..	5	" tetrode .. ..	21
" double-pole .. ..	8	Terminating set .. ..	30	" triode .. ..	21
" gravity .. ..	15	Test-box on pole .. ..	29	" vacuum type .. ..	20
" -hook .. ..	15	" hut .. ..	29	Variable transformer .. ..	7
" multiple-arm .. ..	39	" office .. ..	29	Variability .. ..	5
" single-pole .. ..	8	" testing-point .. ..	29	Vibrating telegraph relay .. ..	32
Tape (telegraph transmitter) .. ..	33	Tetrode valve .. ..	21	Vibrator, ringing .. ..	13, 25
" printing telegraph receiver .. ..	34	Thermal type loudspeaker .. ..	18	Voice-frequency generator .. ..	14
Tappings .. ..	3	Thermo-couple .. ..	19	" ringing equip- " ment .. ..	40
Telecommunication .. ..	27	Three-position key .. ..	8	Voltmeter .. ..	4
" Do. apparatus for .. ..	24	Transformer .. ..	7, 40	Wavemeter .. ..	5
" Do. apparatus, unclassified .. ..	26	" with air core .. ..	7	Wheatstone telegraph appar- " atus .. ..	33
" Do. equipment for .. ..	24	" iron core .. ..	7		
" Do. receiving apparatus for .. ..	24	" three wind- " ings .. ..	7		
" Do. receiving equipment " for .. ..	24	" differential .. ..	7		
" Do. transmitting apparatus " for .. ..	24	" screened .. ..	7		
" Do. transmitting equip- " ment for .. ..	24				
" Do. transmitting and re- " ceiving apparatus for .. ..	24				
" Do. transmitting and re- " ceiving equipment " for .. ..	24				
Telegraph apparatus .. ..	33				
" Baudot .. ..	33				
" Hughes .. ..	33				
" Morse .. ..	33				
" Siemens .. ..	33				
" Tele- " printer .. ..	33				

END