

## EQUIPMENT LOSSES AT 1000 CYCLES HYBRIDS AND 4-WIRE TERMINATING CIRCUITS

### 1. GENERAL

1.01 This section is reissued to provide the latest information on Circuit Layout Codes and transmission losses for hybrid coils and 4-wire terminating sets. Similar information for 173-type hybrid repeating coils is given in Sections 304-204-102, 304-204-103 and 304-204-104.

TYPE OF HYBRID OR TERMINATING CIRCUIT	CIRCUIT LAYOUT CODE	LOSS IN DB (NOTE 1)		NOTE
		TRANS.	REC.	
82C or 124A coils and adjustable receiving pad, not associated with a 30A- or 31A- ringer	4T*	4.0	4.0	2
82C or 124A coils and adjustable receiving pad, associated with a 30A- or 31A- ringer	4T*	4.0	5.5	2
82C or 124A coils and plug-in transmitting and receiving pads	4TM	4.0	4.0	
82A coils and adjustable receiving pad, not associated with a 30A- or 31A- ringer	4T*	4.5	4.5	2, 3
82A coils and adjustable receiving pad, associated with a 30A- or 31A- ringer	4T*	4.5	6.0	2, 3
151B coil, plug-in type transmitting and receiving pads, 3 db impedance improving pad in transmitting path	4TP	7.0	3.4	4
Resistance hybrid, disassociated type	4TR	10.7	10.7	
Resistance hybrid, built-in type for N, O, or ON carrier channel terminals	4TRN	16.0	2.0	5 ←
Miniature set (SD-95137-01)	4TT	3.4	5.6	
Miniature set (modified per SD-95144-01 Fig. 9, Note 9.00)	4TTM	3.4	8.2	
Reading type (W309 or 65A coil)	4T*	3.8	3.8	3
82C or 124A coils, for telephoto, with 10 db pad in transmitting path and filter in receiving path	4TCP	14.0	4.3	6
Hybrid coil, type H or older type C carrier channel, built-in type, when used for 2-wire termination of channel	4T*	3.5	3.5	3

\*Type indicated by note on circuit layout cards.

## SECTION 304-205-100

TYPE OF HYBRID OR TERMINATING CIRCUIT	CIRCUIT LAYOUT CODE	LOSS IN DB (NOTE 1)		NOTE
		TRANS.	REC.	
<b>120N coils, 600-ohm nominal 2-wire impedance:</b>				
SD-56055-01	120NH	3.7 <sup>(1)</sup>	3.7 <sup>(1)</sup>	
SD-56056-01	120NH	3.7 <sup>(2)</sup>	3.7 <sup>(2)</sup>	
SD-56181-01	120NH	3.6	3.6	
SD-56209-01	120NH	3.7 <sup>(3)</sup>	3.7 <sup>(3)</sup>	
SD-56210-01	120NH	3.6	3.6	
SD-56211-01	120NH	3.7 <sup>(4)</sup>	3.7 <sup>(4)</sup>	
SD-96463-01, Fig. 2	120NH	3.6	3.6	
SD-96463-01, Fig. 9	120NH	3.7	3.7	
SD-56094-01	120NH	3.6	3.6	
SD-56095-01	120NH	3.6	3.6	
<b>120P coils, 900-ohm nominal 2-wire impedance:</b>				
SD-55273-01, Option Z	120PHZ	3.4	3.4	7
SD-25943-01	120PH	3.7	3.7	
SD-27016-01	120PH	3.7	3.7	
SD-95443-01, Option S	120PHS	3.6	3.6	8
SD-95489-01	120PHW	3.6	3.6	
SD-96463, Fig. 1, Option W	120PHW	3.6	3.6	
SD-96463, Fig. 1, Option ZX	120PHZX	4.2	4.2	
SD-96463, Fig. 7, Option YD	120PHYD	3.7	3.7	
<b>120P coils, 1500-ohm nominal 2-wire impedance:</b>				
SD-55273-01, Option Y	120PHY	3.4	3.4	7
SD-95443-01, Option T	120PHT	3.6	3.6	8
SD-95489-01	120PHX	3.6	3.6	
SD-96463-01, Fig. 1, Option X	120PHX	3.6	3.6	
SD-96463-01, Fig. 7, Option YE	120PHYE	3.7	3.7	

<sup>(1)</sup> On drawings earlier than Issue 9 losses are 3.6

<sup>(2)</sup> On drawings earlier than Issue 7 losses are 3.6

<sup>(3)</sup> On drawings earlier than Issue 4 losses are 3.6

<sup>(4)</sup> On drawings earlier than Issue 2 losses are 3.6

**Notes:**

1. The losses shown apply to the condition in which, unless otherwise noted, pads or potentiometers in the hybrid or terminating circuit are arranged to give zero loss. (The loss of low-pass filters is not included: when a filter is used, its loss should be added in the proper path, usually the transmitting path; see Bell System Practices Section 304-208-100.) The losses are those which are obtained when the equipment is terminated by the nominal impedances for which it is designed.
2. When this terminating circuit is associated with a *1-tube*, 1000-cycle ringer (Code 30A- or 31A-), an 1800-ohm shunt is installed in the receiving path of the terminating circuit and causes an additional 1.5 db loss in that path. The receiving loss for the second entry of this code includes that additional loss.
3. Show the type by a note on the circuit layout record card.
4. When the 3 db impedance improving pad is omitted, the loss in the transmitting path is 4.0 db.

**Notes (cont)**

5. The resistance hybrid associated with O carrier was formerly coded 4TRO.
6. In the case of the 4TCP, the receiving loss *includes* that of the filter.
7. Terminating circuits codes 120PHZ and 120PHY contain a 20 dc ringer coded 10F whose loss is included in the tabulated value. See also Bell System Practices Section 304-204-104 for losses when these circuits are used as hybrids in No. 4 toll switching system.
8. The loss shown applies when the trunk is arranged for SX or no incoming signaling; for 20-cycle incoming signaling, add 0.2 db in both paths.