

OIL-FILLED TRANSMITTING CONDENSERS

MASS production schedules, thanks to standardized design and widespread popularity, have made these new low prices possible. Yet AEROVOX round-can transmitting condensers are still the same genuine oil-filled units originally limited to the better grade transmitters and high-voltage power supply assemblies. For quality has been strictly maintained—the same construction, materials, rating, guarantee—despite fully competitive prices.

New LOW PRICES

Round Can Type 1005-1000 v.		
Cap.	Old List	New List
1	\$3.20	\$2.70
2	4.25	3.35
4	6.00	4.85

Round Can Type 1505-1500 v.		
	Old List	New List
1	4.00	2.85
2	5.25	3.90

Round Can Type 2005-2000 v.		
	Old List	New List
1	4.75	3.55
2	6.50	4.75

And remember, AEROVOX oil-filled condensers mean precisely what they are labelled: an oil-impregnated section in an oil bath contained in a hermetically-sealed, seepage-proof case. Section constantly soaked in oil. Heating under load, the expanding section forces some of the surrounding oil into every nook and corner of its winding. Then, at no load, section cools and contracts, forcing the surplus oil back into the surrounding bath.

This action insures constant dielectric safety factor, proper cooling, and the elimination of voids. There can be no moisture penetration. That's why AEROVOX oil-filled condensers are dependable, long-lived and really the cheapest in the long run. So don't be misled by unlabelled condensers. Nor by those labelled "oil immersed" or "oil processed", which terms may apply to a wax-filled unit.

Send for CATALOG New 1936 edition covers the complete line of condensers and resistors. Meanwhile, your local supplier can show you the actual items which must be seen to be fully appreciated.

AEROVOX CORPORATION

70 WASHINGTON STREET, BROOKLYN, N. Y.

Sales Offices in All Principal Cities

Popular round-can oil-filled transmitting condensers. Selected paper and foil selection, oil impregnated, placed in oil-filled container. Hermetically sealed. Seepage-proof high-tension terminals. Design prevents plate flutter. 1000, 1500 and 2000 v. ratings.

Rectangular can oil-filled transmitting condensers for commercial grade transmitter assemblies. Selected paper and foil sections. Clamps eliminate plate flutter. Roll-seamed heavy metal containers. High-tension insulators, positively seepage-proof. Mounting flanges. 1000, 1500, 2000, 2500, 3000, 4000 and 5000 v. ratings. A quality product.

AEROVOX also offers . . .



Bakelite molded mica condensers, 1000 to 5000 v. ratings, widest range of capacities.



Metal-case mica condensers, 1400 to 7000 v. ratings, 0.00005 to 0.0025 mfd. High-tension terminals.



Bakelite case paper condensers, 200 to 1000 v. ratings, 0.05 to 1 mfd.



And a large line of resistors . . . wire-wound fixed and adjustable; carbon; strip grid leak mountings, etc.

HOOPER

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Power Supplies

PART 2

By the Engineering Department, Aerovox Corporation

A discussion of power supplies would not be complete without a consideration of modern automobile receivers. The systems in use at the present time include: motor-generators, dynamotors, synchronous and non-synchronous vibrators. The majority of automobile-receivers obtain their B— power from the car battery by means of a vibrator system.

NON-SYNCHRONOUS VIBRATORS

The non-synchronous vibrator consists of an armature which is kept in vibration by an electromagnet on the same principle as the buzzer. At the same time the armature serves as a commutating switch, continually reversing the primary current. The action is best illustrated by Figure 1. This diagram shows only the vibrator itself with the transformer and r.f. filter. When the switch is closed current will flow through the lower half of the transformer primary and then through the magnet windings. The armature is then attracted and contact A will touch contact B, thereby short-circuiting the electromagnet. The armature is then released again and swings back until contact A touches contact C. Meanwhile the electromagnet is attracting it again so that it keeps on vibrating at its own natural frequency and alternately touching contacts B and C. Now when contacts A and B are closed, the lower half of the primary is directly across the car battery, which will result in a heavy current from the center-tap downwards. When A touches C, the upper half of the primary is across the battery and a heavy

current will flow from the center-tap upwards. These two impulses might be considered as alternating current although not of a perfect sine-wave form. An alternating voltage will be induced in the secondary which is rectified in the usual way by means of a full-wave rectifier tube. Type 84 was especially designed for this service; in the metal tube line the 6X5 serves the same purpose.

There are some special precautions to be taken in the design of vibrator systems. When the contacts A and B close there is such a sudden increase of current that a high voltage peak is induced in the secondary. The same is true when the other contacts close.

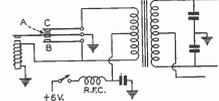


Fig. 1

Furthermore, sparks are likely to appear at the contacts. Various ways have been devised to eliminate the inductive arcing. One method is the Buffer condensers are generally placed across the secondary and sometimes across the primary. Other manufacturers connect a center-tapped resistor across the primary. The buffer condensers will absorb the sudden changes and thereby improve the waveform. Yet this alone is not sufficient to insure noise-free reception. The B-supply filter must contain an r.f. filter in addition to the regular a.f.

filter and the filament circuit may be filtered too. Also, the filament circuit should not have any part in common with the vibrator circuit—except the battery, of course. A typical circuit of an automobile power supply using a non-synchronous vibrator, is shown in Figure 2. This circuit includes center-tapped resistor across the primary and the usual buffer condenser across the secondary. Sometimes two condensers are connected across the secondary with the center-tap grounded. The values of these condensers might be in the neighborhood of 0.1 mfd. They must have a high voltage rating.

Note the r.f. filter in the B-supply filter. There are also two filters in the filament supply. The first, consisting of RFC1 and C1, serves to eliminate the interference caused by the vibrator, while the other section, consisting of RFC2 and C2 is intended to eliminate ignition interference. In addition to all these precautions, both the vibrator and the power supply must be carefully shielded.

SYNCHRONOUS VIBRATORS

The armature of a synchronous vibrator closes another set of contacts which serve to rectify the current in the secondary. Figure 3 shows the diagram illustrating the principle. When the armature moves downwards it not only closes the primary circuit but also the secondary, when it moves up, the other halves of both the primary and secondary are closed. Buffer condensers are again employed in the secondary to improve the wave form. The usual r.f. filters and a.f. filter are used like in the other vibrator systems.

AEROVOX PRODUCTS ARE BUILT BETTER

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