

DATE 10/20/54

SH. 1 OF 3

COMPILED BY

AJJ

TMC SPECIFICATION NO. S - 228

TITLE: PURCHASING SPEC., FILTER, BANDPASS FX 139

JOB

APPROVED

A. J. J.

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B

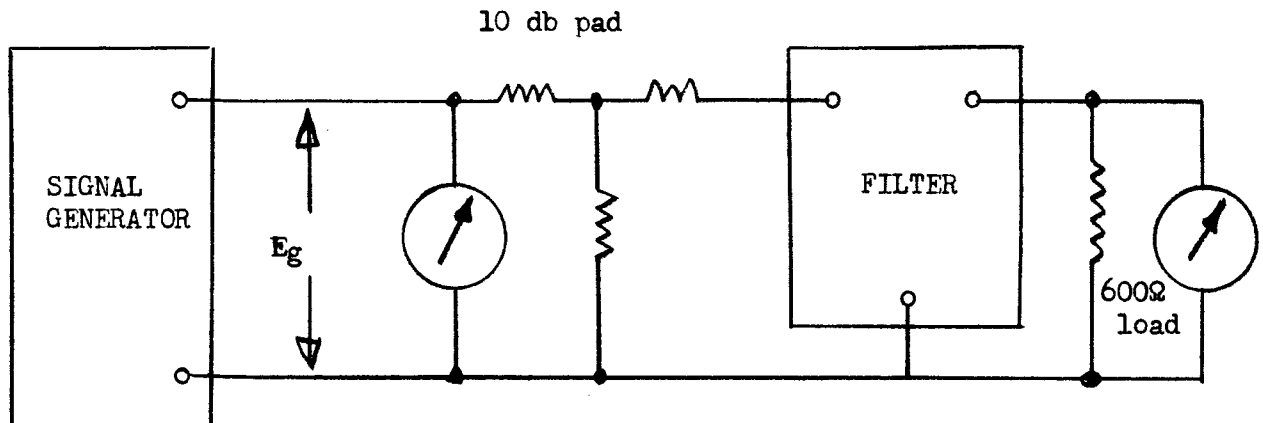
1. ELECTRICAL:

A. CHARACTERISTICS:

- (a). PASS BAND- The frequency Vs. attenuation curve must be flat within a total of 3 db between the limits of ± 50 cps from the specified center frequency.
- (b). REJECTION BAND- The frequency Vs. attenuation curve must be down not less than 20 db at points which are ± 160 cps from the specified center frequency. The attenuation shall never fall below 20 db at all points outside these frequency limits and from 2 to 30,000 cps
- (c). INSERTION LOSS- The insertion loss shall not exceed 5 db at the specified center frequency.
- (d). TEMPERATURE RANGE- The filter shall be constructed so that within the temperature range of 0 to 80° C, the specifications (a) and (b) above, shall remain in full force relative to the original specified center frequency. (c) shall not incr. more than 1.5 db.
- (e). DRIFT- The long term drift shall be such that specifications (a), (b), and (c), above, shall remain in full force when measured at an ambient temperature of approximately 25° C at the end of a six months period beyond the date of delivery.

After a two year period has expired the 3 db and 20 db points shall not have shifted more than ± 3 cps from their original ± 50 cps and ± 160 cps positions relative to the specified center frequency when measured at approximately 25° C. In addition, the insertion loss shall not have increased by more than 1.5 db.

- (f). TEST CONDITIONS- The conditions under which all the foregoing tests shall be made are as follows:



E_g shall be maintained constant at one volt RMS throughout the tests.

The insertion loss shall be measured by reading the voltage across the load with the filter in the circuit and at center frequency. Another measurement shall then be made with the filter removed and the load connected directly at the pad output terminals. The ratio of these two levels shall constitute the insertion loss.

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- (g). INTERCONNECTION The filters shall be so constructed that the output terminals of the entire FX 139 series may be connected in parallel without deteriorating the performance of any one unit.
These units shall also be so constructed that the output terminals of the type FX 140 may be connected directly to the input terminals of the type FX 139 of like center frequency without deteriorating the individual performance of either unit.
- (h). IMPEDANCE- The input and output impedances within the bandpass shall be 600 ohms, unbalanced.

B. COMPONENTS:

- (a). All toroids shall be vacuum impregnated after winding.
- (b). All completed filter cans shall be hermetically sealed and vacuum filled.
- (c). All capacitors in all filters designed for center frequencies of 1105 cps and above shall be "D" or "E" temperature characteristic silver micas.
- (d). Where possible, all capacitors in all filters designed for center frequencies of 935 cps or below shall be "D" or "E" temperature characteristic silver micas.
- (e). Torroid cores shall be stabilized and shall have temperature coefficient characteristics at least as good as The Arnold Engineering Company D-671157-3.
- (f). All components shall be rigidly mounted before potting.

C. DESIGNATION:

The filters shall be designated as follows:

<u>Center Frequency (cps)</u>	<u>Part Number</u>
425	FX 139 - 425
595	FX 139 - 595
765	FX 139 - 765
935	FX 139 - 935
1105	FX 139 - 1105
1275	FX 139 - 1275
1445	FX 139 - 1445
1615	FX 139 - 1615
1785	FX 139 - 1785
1955	FX 139 - 1955
2125	FX 139 - 2125
2295	FX 139 - 2295
2465	FX 139 - 2465
2635	FX 139 - 2635
2805	FX 139 - 2805

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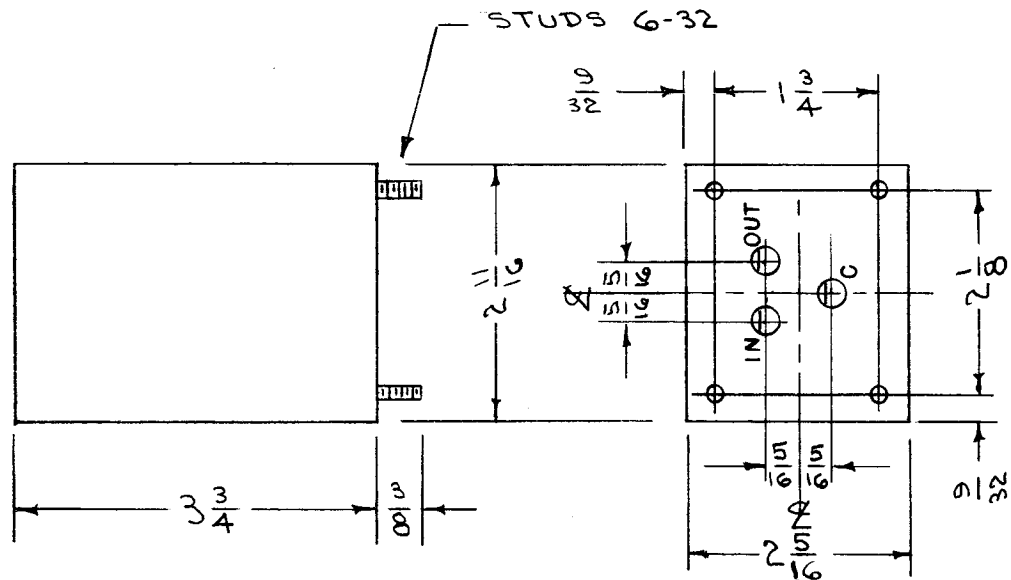
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2. PHYSICAL:

A. DIMENSIONS:

The unit shall be enclosed in a can having the following dimensions, mounting system, and terminal placement:



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B. PRINTING:

- (a). The following lettering shall appear on each can top and shall be stamped in paint to prevent easy removal:

THE TECHNICAL MATERIEL CORP.
MAMARONECK, NEW YORK

PART NO. FX 139 - _____

where the assigned center frequency shall appear in the blank space.

- (b). No designation relating the finished product to the original manufacturer shall appear anywhere on the can.
(c). The appropriate terminals on the can bottom shall be marked IN and OUT, and C.

C. PAINTING:

- (a). The unit shall be painted TMC gray according to TMC specification S - 115 but using, instead, a paint which requires baking at a temperature not to exceed 240° F.

DATE	REV.	PAGE	ITEM	DESCRIPTION	REMARKS	APP.
11-1654	A	1	A(b)	Was ± 150 cps FROM SPEC. CENT. FREQ.	LINE 2	AJJ
"	A	1	A(c)	Was 2.5 DB	LINE 1	AJJ
"	A	1	A(d)	Was --- the spec. (a), (b), and (c) above,	LINE 2+3	AJJ
"	A	1	A(e)	Was --- and 150 cps positions ---	LINE 7	AJJ
"	A	1	A(d)	(c) Shall not incr. more than 1.5 DB ADDED	LINE 4	AJJ
"	A	1	A(b)	was --- and from 2 to 30KCS.	LINE 4	AJJ
9/21/55	B	1	----	FX-139 was FX-141.		AJJ
"	A	2 & 3	----	" " "		AJJ