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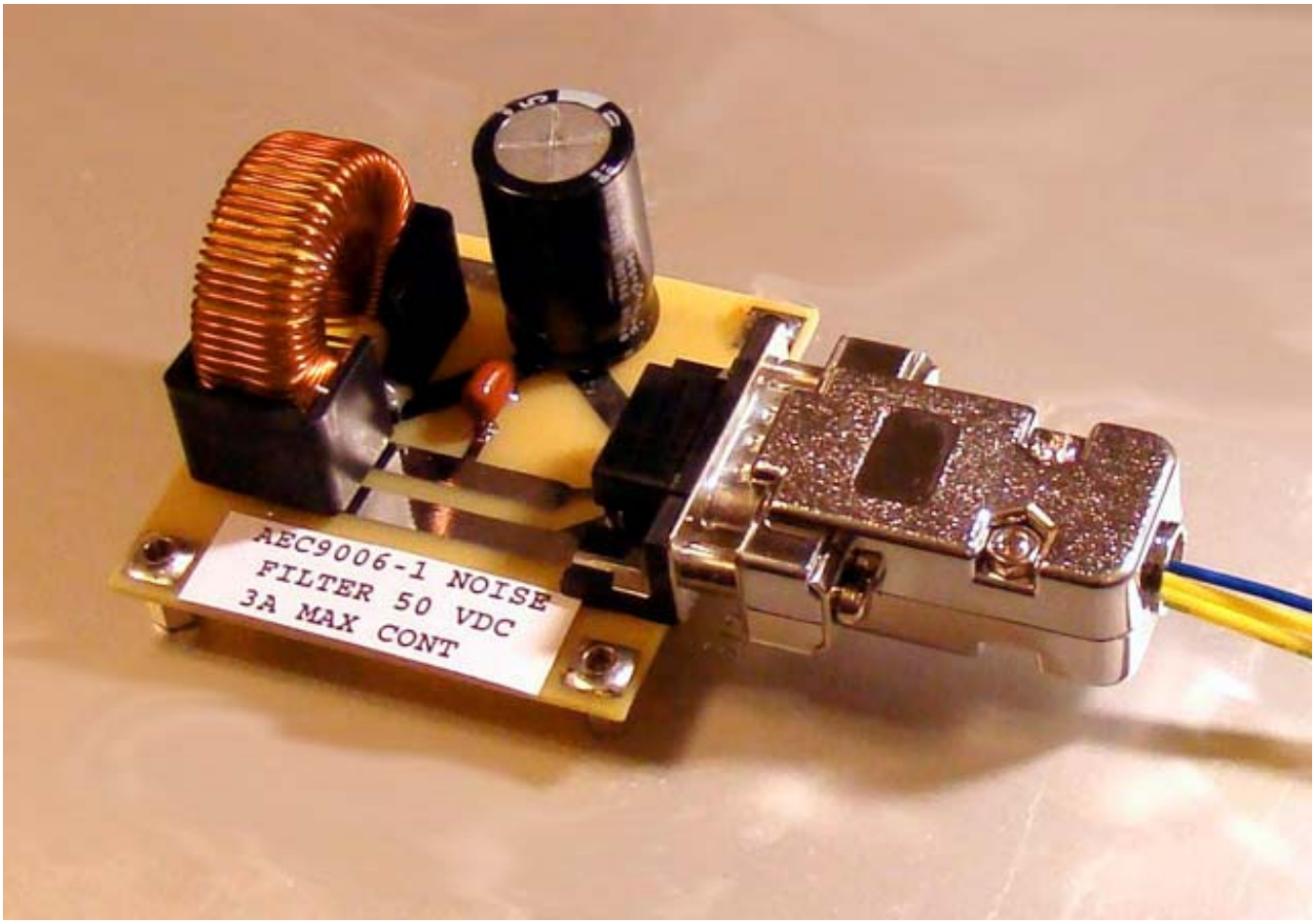
Installation and Operation Manual
AEC9006 Series Audio Noise Filters



9006-700A
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1. INTRODUCTION

The majority of products designed for use in airplanes are already endowed with an ability to withstand normal and expected noise levels on the ship's power. Similarly, these same appliances are evaluated for their ability to limit the generation of noise to levels at or below objectionable levels.

Occasionally, the owner/operator of an airplane discovers that some useful device is exceptionally sensitive to normal noise levels . . . or exceptionally generous with the noise that it produces.

Notice

AEC9006-1 Audio Noise Filters are not FAA approved. They are not offered for use on any type certified aircraft.

Do not order this product with intent to install on a type certified aircraft before you contact the local offices of the FAA for guidance and a commitment to assist you with a field approval.

The task of mitigating a noise problem is to (1) identify the victim - usually easy, (2) identify the antagonist and (3) identify the propagation mode for the noise. Once these three things are known, a plan of attack for reducing the problem can be drawn. Modifying the victim or antagonist appliance can offer a remedy for a noise issue.

When it is discovered that noise is propagating over the ship's power bus, one can attack the propagation pathway for the noise with a filter of some variety. Noise filters need to offer ATTENUATION of the noise signature while carrying power to or from the appliance with acceptable voltage drop. Obviously it must be able to carry the DC current needed by the appliance without overheating.

The AEC9006 series of power line noise filters offers a means of attenuating if not breaking the noise propagation on DC power lines. This device was crafted in response to Radio Shack's decision to get out of the automotive audio market. They eliminated their stocks of radio and audio systems along with a line of accessories like antennas and filters. The AEC9006-1 filter is the smallest of a series of proposed products that will cover the range of filters previously offered by Radio Shack.

SPECIFICAITONS

2.1 Operating Voltage . . . . . 0-50 VDC

2.2 Operating Current: . . . . . 3A, 7A Intermittent.

2.3 Weight: . . . . . 80 Gms/2.9 Ounces (includes mating connector and hood)

2.4 Dimensions: See Figure 1.

2.5 Connection: Mates with industry standard 9-Pin, female D-Sub connector. Standard connector orientation is parallel to mounting plane. The ACE9006-1V offers an optional vertical connector orientation on special order.

2.6 Attachment: The filter assembly attaches to a flat surface on the airframe or installer supplied attach bracket with four, 4-40 screws supplied in kit.

3. PARTS SUPPLIED

3.1 AEC9016 Series Installation Kits Contents						
		4	4		6	Screw , Machine, 4-40 x .25" Socket Hd
		9	9	D20F	5	Socket, Machined, 20AWG D-sub
		1	1	D9H	4	Hood Kit, 9-Pin D-sub
		1	1	D9F	3	Connector, 9-Pin D-sub Female
		1		9006-100-2	2	Noise Filter Assembly - Vertical Connector
			1	9006-100-1	1	Noise Filter Assembly - Horizontal Connector
				AEC9006-2		Noise Filter - Vertical Connector (Kit)
				AEC9006-1		Noise Filter - Horizontal Connector (Kit)
		-2	**-1**	**Part No.**	**#**	**Description**
Quantity/Assembly						

3.2 Materials Not Supplied Depending on the kit purchased, the installer may need to supply some additional installation materials as follows:

3.2.1 Mounting Bracket: If no suitable surface for installation is available at the proposed mounting location, the installer may have to fabricate a L-shape or similar mounting bracket. This should be a minimum of .040" thick aluminum with a bend radius conducive to avoidance of stress risers.

3.2.2 **Wire:** Pins in the supplied D-sub connector will accept wires over the range of 20-24AWG. Wire for installation of the filter is supplied by the installer.

3.2.3 **Wire Wrap:** The installer supplies silicone or vinyl tape to support the wires where they exit the connector hood.

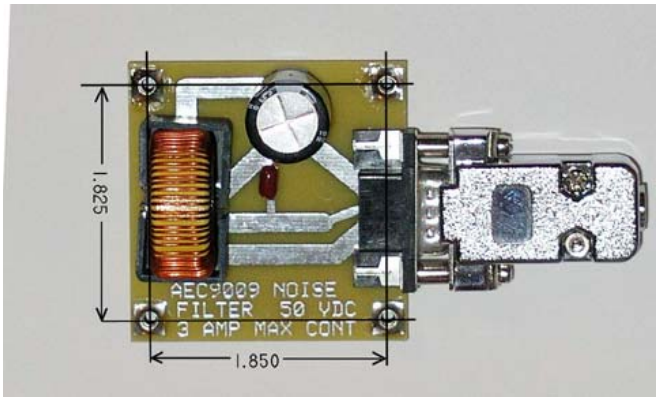
4. INSTALLATION TOOLS

4.1 Aside from ordinary hand tools you will need a crimping tool (B&C Specialty Products RCT-3 or equivalent) to install the machined D-sub connector pins supplied with these kits. In case you put a pin into the wrong hole and need to remove it, you may also wish to purchase a rear-release extraction tool for these pins (B&C Catalog # DSE-1). D-sub connectors are widely use in many aviation products and these tools are good additions to your toolbox. If prefer you may substitute a solder style, 9-pin, female D-sub connector from a local supplier.

5. INSTALLATION INSTRUCTIONS

5.1 Etched Circuit Board Assembly The filter assembly should be mounted as close as practical to the noise source.

5.2 The Filter assembly is fitted with captive, 4-40 threaded spacers for mounting. Clearance drill for 4-40 is #30. Lay out holes on 1.825" x 1.850" rectangle as shown in adjacent figure



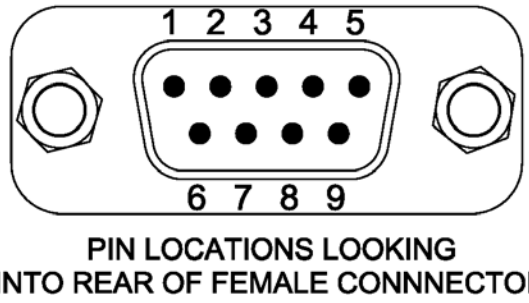
5.3 Wiring –1/-2 Kits: Wiring for these kits is illustrated in table below. The pins supplied with this kit will accept 20 or 22AWG wire.

AEC9006 Noise Filter Wiring	
Pin #	Noise Filter Connector
1, 2, 6	Power Input-Output (faces noise source)
3, 7, 8	Ground
4, 5, 9	Power Input-Output (faces victim)
3, 6, 7, 8	Ground

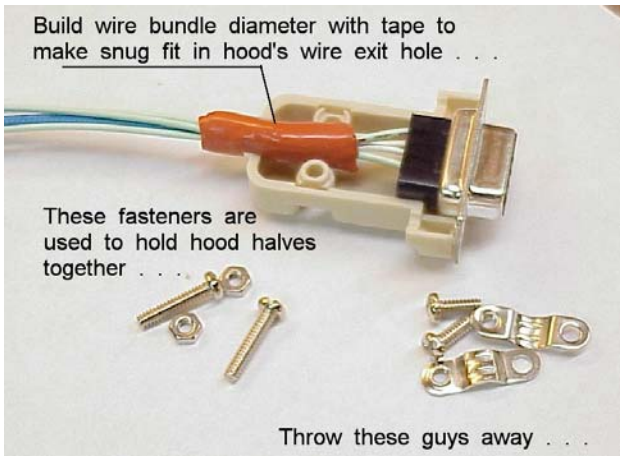
5.4 D-sub Connector: All kits are supplied with a 9-pin, crimped pins style connector housing (3) and a quantity of female, machined pins (5). These pins can be installed on wires ranging from 20 to 22AWG using a 4-quandrant crimp tool as called out in Section 4.

5.5

5.6 Pin numbers layout for the connector is illustrated in the adjacent figure.



PIN LOCATIONS LOOKING
INTO REAR OF FEMALE CONNNECTOR



5.7 When all wiring is installed in the connector, wrap the wire bundle with silicon or plastic tape to build its diameter to a snug fit in the cable exit hole on the connector hood (4).

5.8 Assemble hood over connector as shown in adjacent photo.