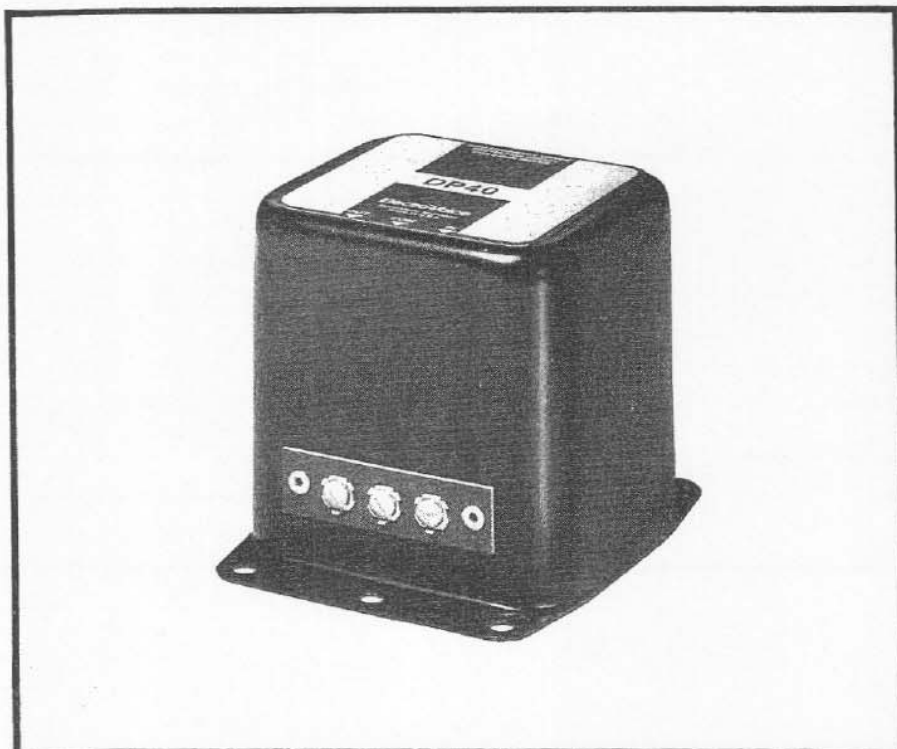




Electro-Voice®
a gulton company

Model DP40 Driver Protector

SPECIFICATIONS

Insertion Loss:

0 dB

Attenuation In Protection Mode:

6.0 dB

Power Handling (Dissipation within DP40):

40 watts

Recommended Nominal Driver Impedance:

8 ohms

Recommended Compression Drivers:

DH1

DH2

DH2012

DH1012

DH1506

Throw Time

(Delay before attenuation occurs):

8-12 ms

Recovery Time:

30 ms

Threshold Voltage (see Figure 1),

100 Hz:

11.8 volts (17 watts)

1,000 Hz:

17.9 volts (40 watts)

10,000 Hz:

27.4 volts (94 watts)

Electrical Connections:

Three screw terminals on barrier strip (#8-32); input positive, output positive, common negative

Mounting:

Six .219-in. diameter screwholes in tabs at bottom of housing

Dimensions:

8.9 cm (3.5 in.) high

9.2 cm (3.6 in.) wide

11.2 cm (4.4 in.) deep

Net Weight:

0.42 kg (0.92 lb)

Shipping Weight:

DESCRIPTION

The Electro-Voice DP40 is a power-limiting device designed to protect high-frequency compression drivers such as the Electro-Voice DH1, DH2, DH2012 and DH1506 from potentially damaging input signals. When the long-term-average power rating of the driver is exceeded, the DP40 provides approximately 6-dB attenuation to insure safe operation. As compression drivers are capable of sustaining higher power over very short periods of time, the voltage sensing circuit and relay ballistics of the DP40 allow short peaks of energy to pass unattenuated for wide dynamic range without "hard compression." Thus, the DP40 effectively increases the power-handling of the system and provides an added safety factor for drivers located in difficult-to-reach locations such as suspended central clusters.

The DP40 provides attenuation when the input power at 1,000 Hz exceeds 40 watts (RMS). The power level at which attenuation occurs increases with increasing frequency due to the diminished risk of over-excitation damage at higher frequencies. A plot of maximum power before attenuation is shown in Figure 1 for selected frequencies.

ALTERATIONS

The DP40 is designed to limit power to 40 watts for 8-ohm drivers. However, it may be adapted for other purposes by making minor changes in the supplied circuit. These modifications should only be performed by qualified individuals. As Electro-Voice has no control over components used, such modifications will void the warranty. However, for the convenience of qualified personnel, instructions for modification are included in

THRESHOLD VOLTAGE ADJUSTMENT

If special applications call for a threshold power other than the factory setting of forty watts, internal adjustment is possible using the following procedure.

First, pry the bottom panel out of the housing using a flat-blade screwdriver. The potentiometer which determines the threshold voltage will then be visible (see Figure 2). Apply a 1,000 Hz signal to the input terminals. Then listen closely as the voltage is gradually increased. A click will be heard when the threshold voltage is reached, which is the sound of the relay tripping. Note the voltage at the time the relay trips. This is the threshold voltage. Use a screwdriver to turn the potentiometer counterclockwise to lower the voltage, clockwise to raise it. The source voltage must be lowered well below the threshold voltage before the relay will reset. Then raise the source voltage again to find the new threshold voltage. By repeating this process the DP40 may be set to the threshold voltage desired.

IMPEDANCE MATCHING

The DP40 has been designed to protect one 8-ohm compression driver from overload. However, by adding appropriately scaled resistors, the unit may be used to protect two or more 8-ohm drivers in parallel or to protect one or more drivers in a 70.7-volt line.

For 4-ohm operation (two paralleled drivers), a 10-ohm resistor of at least 25-watt power rating should be connected in parallel with resistor R1 (see Figure 2 for location of R1). This will set the cutout attenuation to 6 dB and the threshold voltage may be left the same as that for a single driver. If this resistor is not added the cutout attenuation

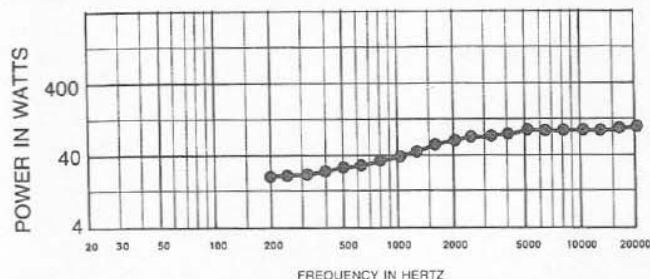


FIGURE 1 — Maximum Allowed Input Power vs. Frequency (Threshold Power)

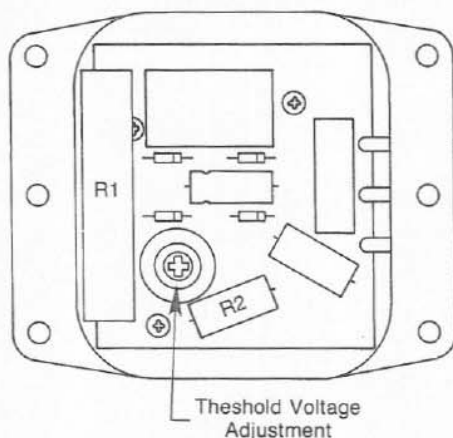


FIGURE 2 — Component Location

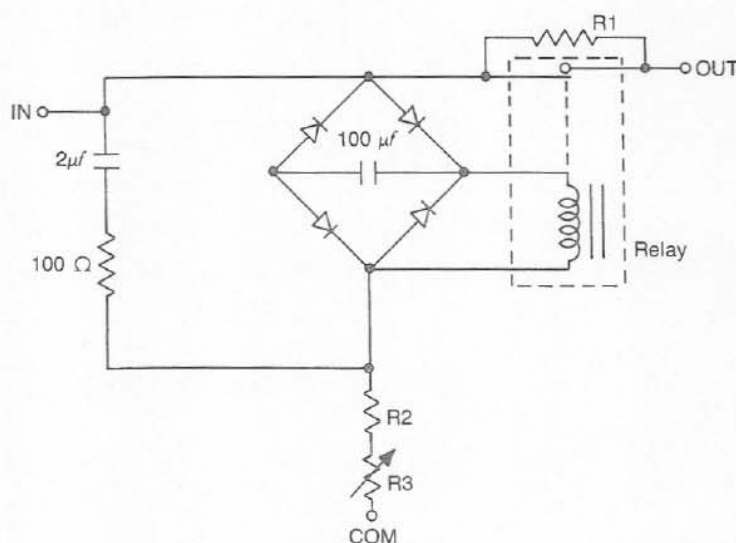


FIGURE 3 — Schematic Diagram

For 70.7-volt line operation, R2 should be replaced by a 500-ohm resistor and R1 should be replaced by a resistor with a value similar to the nominal line impedance of the system (Figure 2 shows the location of both R1 and R2). The threshold voltage should then be set to the proper value, as described in the Threshold Voltage Adjustment section. Care should be taken that the resistor used to replace R1 has a power rating as great as the sum total of the power delivered to the drivers at threshold voltage.

INSTALLATION INSTRUCTIONS

The DP40 should be inserted in the line to the compression driver. The positive wire from the driver should be connected to the terminal marked "IN." The positive wire from the driver should be connected to the terminal marked "OUT." The negative wires from both the driver and the amplifier should be connected to the terminal marked "COM."

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The high-frequency-driver protection circuit shall protect an 8-ohm driver by switching a resistor into series with the driver for any input over 40 watts and of duration longer than 12 ms. It shall protect at a lower power level for inputs below 1,000 Hz and at a higher power level for inputs above 1,000 Hz.

The circuit shall be contained within a steel housing no larger than 8.9 cm (3.5 in.) high by 9.2 cm (3.6 in.) wide by 11.2 cm (4.4 in.) deep. The housing shall be provided with mounting tabs and #8-32 screw terminals for electrical connection.

The high-frequency-driver protection circuit shall be the Electro-Voice DP40.

WARRANTY (Limited)

Electro-Voice Professional Sound Reinforcement Electronic Components are guaranteed for two years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not extend to finish, appearance items or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee. A list of authorized service centers is available from Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107 (AC/616-695-6831); Electro-Voice, Inc., 3810 148th Avenue N.E., Redmond, WA 98052 (AC/206-881-9555); and/or Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93291 (AC/209-651-7777). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

Specifications subject to change without notice.



ELECTRO-VOICE, INC., 600 Cecil Street, Buchanan, Michigan 49107