MODEL 596SGFI

DUAL CURRENT SENSING GROUND FAULT INDICATOR

The Model 596SGFI is a Dual Channel, Current sensing, Ground Fault Detector module. In conjunction with any IED Monitor/Test system, it can be used to monitor the current being drawn by a speaker circuit. When connected to an amplifier output it can detect a ground fault on a speaker line.

The 596SGFI is a current to voltage conversion device that is wired in series with loudspeakers connected to a power amplifier output. The audio monitor output terminals are normally connected to the input of an IED monitor (596 or 8081MT cards) device. The voltage available at the output terminals is a function of the current delivered to the speakers.

Once the test signal level and the amplifier gain are set, the amplifier output voltage remains constant during normal testing conditions unless a fault occurs in the amplifier. The speaker line impedance varies due to changes in environmental conditions such as humidity and temperature, or due to a change in equivalent speaker circuit impedance as a result of speakers opening or shorting. To accommodate variations of speaker impedance due to environmental changes and thereby avoid spurious speaker line fault indications, the allowable deviation from the set point can be adjusted using the Monitor/Test System software.

In order to detect ground faults, the 596SGFI requires external +5 VDC power. No power is required to measure speaker load current. The 596SGFI can be mounted in a snap track, part # 3TK2-48 which is available at *www.tycoelectronics.com*. The modules can be 'daisy-chained' together, requiring power to be run to the first module in the chain, only, simplifying the installation.

Figure 1 illustrates the connection of the 596SGFI to an amplifier/speaker system. In order to detect ground faults, the monitor connection must have the shield terminated at both ends.

IED®
Innovative Electronic Designs

SPECIFICATIONS

ELECTRICAL

1. Frequency Response, monitor output
   - 20 Hz . . . . . –20 dB
   - 2 kHz . . . . . 0 dB
   - 20 kHz . . . . . –1 dB
2. Total Harmonic Distortion, THD, monitor output
   - 20 Hz - 22 kHz filters
     - 20 Hz. . . . . <5.0 %
     - 300 Hz . . . . . <0.5 %
     - 2 kHz. . . . . <0.5 %
     - 20 kHz . . . . . <0.5 %
3. Ground Fault Detection Loss . . . . . >30 dB
   - As measured by the Monitor/Test System
4. Max. Current Drain . . . . . 80 mA
   - Ground fault detected, +5 V supply
5. Quiescent current drain. . . . . 2 mA
   - No ground fault detected, +5 V supply

CONNECTORS

1. Monitor Output
   - 3 pin compression-type screw terminal connector plug . . . . Phoenix 1803581

MECHANICAL

1. Size
   - Height. . . . . 3.25"
   - Width . . . . . 3.25"
   - Depth. . . . . 1.5"
2. Mounting Configuration
   - Snap Track 3TK2-48

ENVIRONMENTAL

1. Operating Temperature Range . . . . . (+32 °F - +104 °F) 0 °C - +40 °C
2. Storage Temperature Range . . . . . (–40 °F - +158 °F) –40 °C - +70 °C

Innovative Electronic Designs, LLC • 9701 Taylorsville Road • Louisville, Kentucky 40299 • USA
Phone: (502) 267-7436 • Fax: (502) 267-9070 • Internet: http://www.iedaudio.com

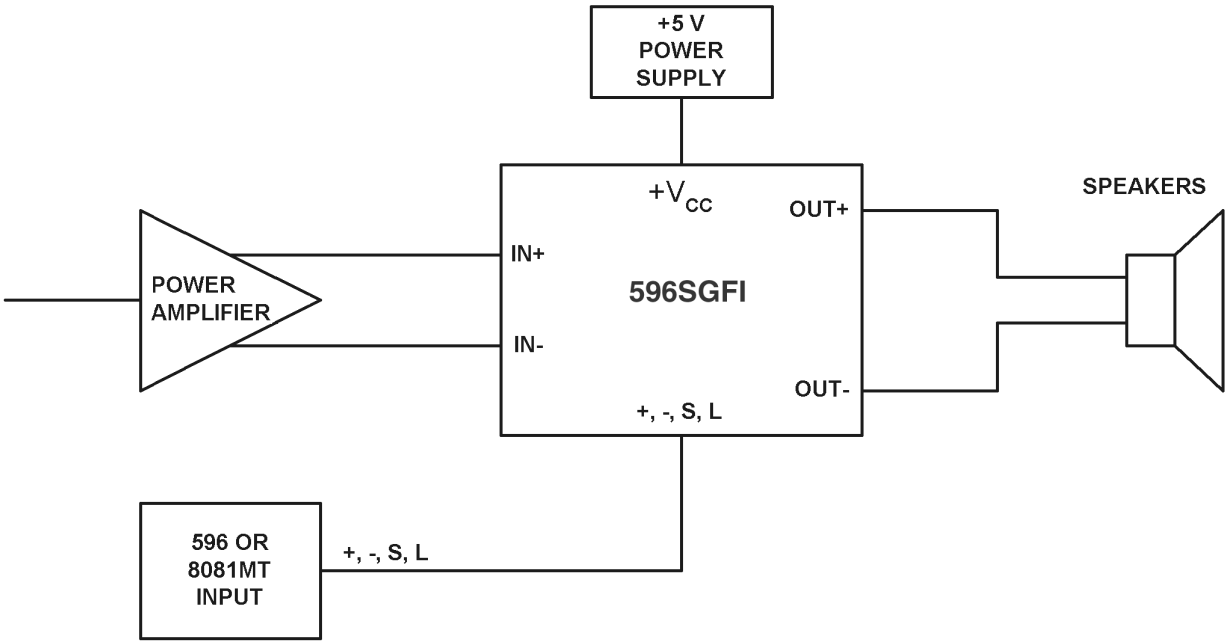

Figure 1 - 596SGFI Amplifier Wiring

This page left blank intentionally