TSE 050
Frequency Generator

1 INTRODUCTION

The TSE050 is a Frequency Generator used to simulate the signal from a magnetic pickup. The output is variable from 750 Hz to 10 KHz and has a 50% Duty Cycle with a 5 Volt peak square wave. The unit is powered by a 12/24 V battery system and has power-reversal protection. The unit has one green LED to indicate the presence of an output frequency.

2 WIRING

Connect the Red and Black wires to a battery or a power supply capable of anywhere from 6 VDC to 30 VDC. Connect the Blue wire to the magnetic pickup connection on the speed controller shown in the wiring diagrams. Make sure the actuator is connected. Turn ON power to the speed controller, and then power the TSE050. The LED on TSE050 should illuminate indicating the output signal is present.
See Wiring Options on page 2

⚠WARNING

The engine must not be started or operated while the TSE050 is connected.

Disconnect or lockout the starter if using TSE050 on an engine. Engine runaway may occur if the engine accidently starts.

3 ADJUSTMENTS

The TSE050 is equipped with a 25 turn potentiometer for setting the frequency; adjusting the frequency of the TSE050 is simple. To increase the frequency, turn the potentiometer clockwise. To decrease the frequency, turn the potentiometer counterclockwise.

The actuator will only move if the output signal's frequency from the TSE050 is less than the speed setting of the speed controller. If actuator does not move once power has been applied to the TSE050, decrease the output frequency by turning the potentiometer counterclockwise. Once the actuator starts to move, rotate the potentiometer ½ turn more counterclockwise. The default output frequency is 1717 Hz.

4 TROUBLE SHOOTING

LED does not turn on

1. Verify power is present by measuring the voltage between the red wire and the black wire.
2. If the voltage is less than 6 VDC, the voltage is too low to run. Bring the voltage up to at least 6 VDC.
3. If the voltage is negative, reverse the red and black wire to the power supply.

LED turns on but actuator does not move

1. Make sure that the speed controller is powered before the TSE050 is powered. The speed controller and TSE050 must be powered up in sequence, in order for the speed controller to read the speed correctly.
2. Verify that the speed controller has power. Measure the voltage to the speed controller and verify that the voltage meets the requirements of the device.
3. Measure the AC Voltage at the Magnetic P/U input on the speed controller and verify that it is at least 1 VAC. Swap the wires if the voltage is too low or 0 VAC.
4. Turn the potentiometer all the way counterclockwise until the frequency is around 750 Hz.
5. Verify that power is present on the actuator terminals on the speed controller. If there is no power, remove actuator wires from the speed controller and test for power at the actuator's terminals. If power is present, the power problem is downstream from the speed controller. Examples: wiring, actuator or from mechanical source

5 SPECIFICATIONS

PERFORMANCE

Output Voltage.....4.5 to 5.5 V @ 50% Duty Cycle
OutputFrequency.....adjustable 750 Hz to 10 kHz

ENVIRONMENTAL

Ambient Operating Temp Range.....0˚ to 70˚C (32˚F to 157˚F)
Relative Humidity.....up to 95%
All Surface Finishes.....Fungus Proof and Corrosion Resistant

INPUT POWER

Supply.....12/24 V Battery System
.....(Transient, Overvoltage and Reverse Voltage Protected)
Polarity.....Negative Ground (Case Isolated)
Power Consumption.....30 mA continuous

RELIABILITY

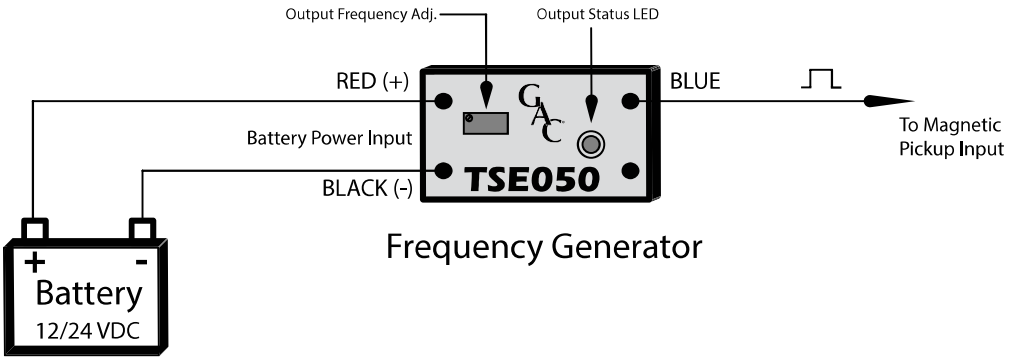
Vibration.....5G @ 20-500 Hz
Testing.....100% Functionality Tested

PHYSICAL

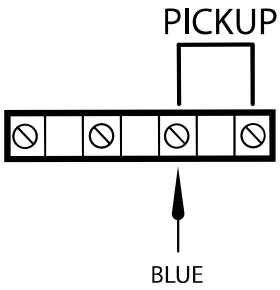
Dimensions.....3.0" x 2.0" x 1.0" (76.2mm x 50.8mm x 25.4mm)
Weight..... .22 lbs. (100g)

⚠WARNING

Disconnect the magnetic pickup from the speed controller when using the TSE050. Only 1 speed device may be connected to the speed controller at any time.



ESD Series



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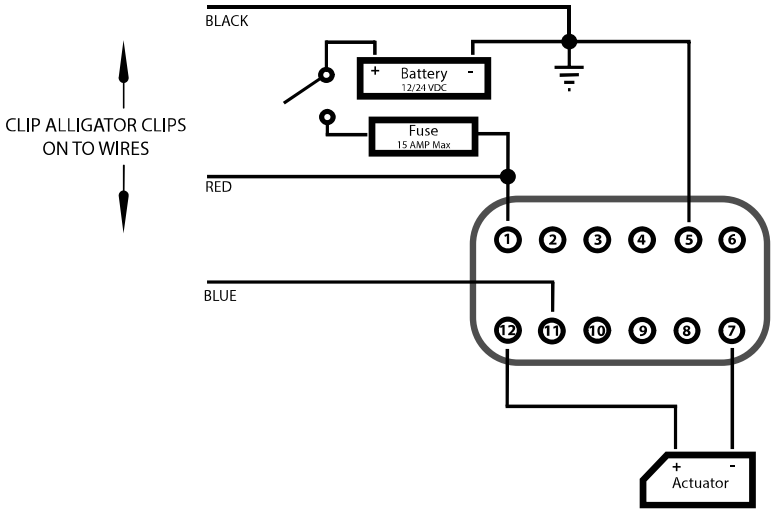
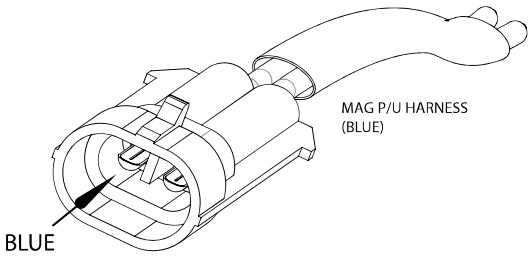
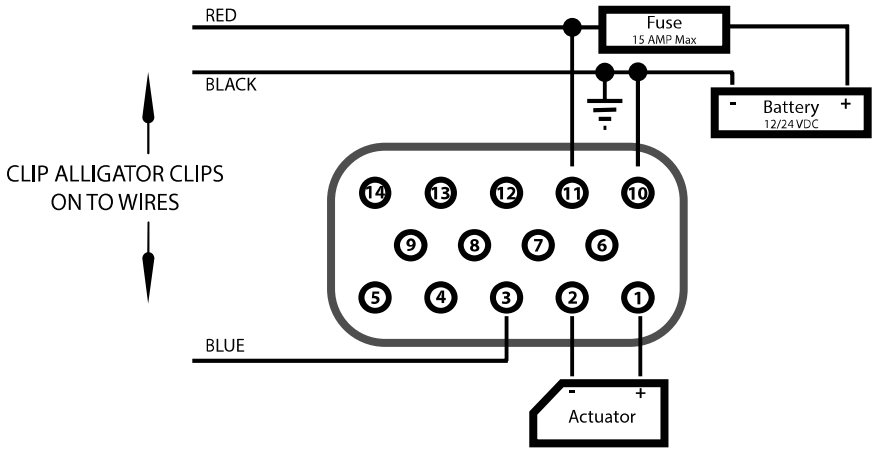


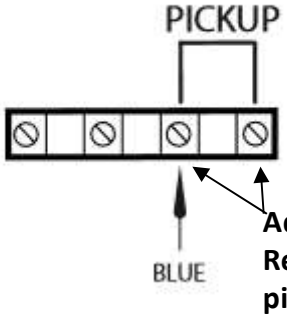
DPG Series



EDG6000



EEG Series



Add 511 ohm Resister across pickup terminals