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PULSE KING

PULSE TECH FUEL SAVER & BATTERY REVIVER.

Best for gasoline vehicles with engine power under 4,000 cc and heavy motorcycles with engine power over 350 cc

1. Burns better, save gasoline by 5% ~ 25%

2. Renew battery, prolong battery's life by up to 300%

3. Boots horsepower obviously on most models.

4. Reduced harmful emissions

5. Easy starting and increasing engine performance.

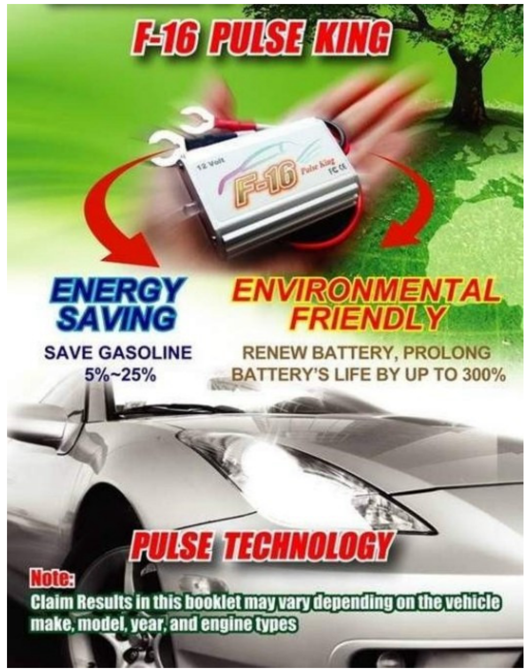
6. Head lights turned brighter on older models.

7. Reduce battery replacement, good for environment.

8. Standard: CE, FCC, SGS

9. Size: 6.4 X 4.0 X 0.8 cm

10. Net Weight: 43 gram



F-16 Pulse King lowers electronic noise generated by the ignition systems increasing horsepower, better torque and increased gas mileage. With the F-16 Pulse King the electric noise generated from your car's ignition system within the frequency load from 750rpm until 6000rpm is absorbed and combustion efficiency of your vehicle is increased

Lowers interferences of electronic noise reducing difficulty to your vehicle's electronic equipment. The F-16 Pulse King can be used to ease the electronic noise and increase the effects of ground returning to the negative post of your battery. Prevents problems and unwanted noise coming from electronic devices and also avoids functional decline of each device. With the F-16 Pulse King, the potential of all electrical components of your vehicle can be extracted as much as possible. Reduced audio noises, stabilizing idling, brighter headlight illumination, and reduced gas emission.

THE TECHNOLOGY

A voltage controlled oscillator (VCO) is an electrical circuit that produces an oscillatory output voltage. A voltage-controlled oscillator (VCO) provides a periodic signal where the frequency of the periodic signal is related to the level of an input voltage control signal supplied to the VCO. A voltage controlled oscillator is simply an oscillator having a frequency output that is proportional to an applied voltage. Oscillators frequently consist of one or two transistors, an inductor (L), and a capacitor (C) in an LC tank circuit, followed by a buffering amplifier. An oscillator circuit may be implemented with a tuned amplifier having positive feedback from the amplifier's output terminal to its input terminal, which design takes advantage of the instability possible in circuits having such a feedback loop. Oscillators are used as stable frequency sources in diverse electronic applications. Oscillator circuits are used in computers, computer peripherals, counters, timers, calculators, phase-locked loops, digital multimeters, oscilloscopes, and numerous other applications. An oscillator circuit may act as an active device, such as a transistor, to produce power gain; or may be used in feedback network, routing a sufficient amount of the active device's output signal to an input of the active device, to sustain oscillations. An oscillator circuit may be used to provide a clock signal, or to produce an accurate waveform. For example, in communication systems, oscillators are often used to provide a stable frequency reference signal for translating information signals to a desired frequency band. A common oscillator implementation is known as a voltage controlled oscillator (VCO) circuit, where an input tuning voltage is applied to an oscillator circuit and the tuning voltage adjusted to set the frequency at which the circuit oscillates.

Voltage controlled oscillators are basic building blocks of many electronic systems especially phase-locked loops and may be found in computer disk drives, wireless electronic equipment such as cellular telephones, and other systems in which oscillation frequency is controlled by an applied tuning voltage.

A voltage-controlled oscillator (VCO) forms a periodic output signal where a frequency of the periodic output signal is related to the level of an input control voltage. The center frequency of a VCO is the frequency of the periodic output signal formed by the VCO when the input control voltage is set to a nominal level. The voltage-controlled oscillator has a characteristic gain, which often is expressed as a ratio of the VCO output frequency to the VCO input voltage. VCOs typically utilize a variable control voltage input to produce a frequency output. The control voltage input typically may be tuned so that the VCO produces a desired, operational frequency output. The input control voltage is then adjusted up or down to control the frequency of the periodic output signal. A voltage controlled oscillator is capable of varying an oscillating frequency in response to a change in control voltages. A VCO typically employs one or more variable capacitors (varactors) to allow for adjustment of the frequency of oscillation for the VCO. The tuning range of the VCO refers to the range of oscillation frequencies achieved by varying the varactors. To reduce the tuning range requirement, a VCO may employ a programmable capacitor bank to aid with the adjustment of the oscillation frequency. The capacitor bank contains a bank of tuning capacitors that may be individually switched on or off. Each tuning capacitor reduces the oscillation frequency when switched on. A voltage controlled oscillator generally is composed of a resonance circuit, an oscillation circuit, and a buffer circuit, and provides a stable high-frequency carrier signal required for communication. Typically, the VCO in an integrated circuit comprises a monolithic amplifier section with a resonant circuit external to the amplifier or a fully integrated solid state device, such as a ring oscillator, that does not include a resonator with reactive components. Voltage controlled oscillators often have a tuning stub that is used to fine-tune the frequency of operation of the voltage controlled oscillator. A stub is employed to establish the frequency of operation of the voltage controlled oscillator. In some voltage-controlled oscillators, a varactor diode is employed since the space-charge capacitance of the varactor changes as a function of control voltage, thus changing the capacitance of the tank circuit. Ring-type oscillator is one kind of voltage-controlled oscillators. A ring oscillator oscillates at a particular frequency that generally is inversely proportional to the number of delay elements comprising the ring. A ring oscillator that is based on single-ended signaling typically includes an odd number of delay elements greater than or equal to three. For many applications, such as data communications, ring oscillators with higher oscillation frequencies are preferred over ring oscillators with lower oscillation frequencies. Voltage controlled oscillators may exhibit "phase noise," which is a measure of how much the VCO output signal deviates from a pure sine wave at a single frequency. It is realized by cascading several delay cells to form a closed loop. The ability of a voltage controlled oscillator to change frequencies can be measured by 3 dB modulation bandwidth and tuning time. Normally, the 3 dB modulation bandwidth is determined at a low modulation index. Voltage controlled oscillators mainly produce high frequency signals. The frequency of these high frequency signals generally depends upon the capacitive value of a resonant circuit. This capacitive value is modified as a function of a control voltage applied to the varactor. The frequency of oscillations generated by a VCO is controlled by an externally applied control voltage. Two important parameters in VCO design are linearity and sweep range. Linearity correlates the change in frequency or the VCO output to the change in the control voltage. The sweep range is the range of possible frequencies produced by VCO control voltage. Various types of VCOs have been proposed over the years. VCOs comprised of bipolar junction transistors have been used to generate output frequencies in 5 to 10 MHz range. As the demand to use higher speed integrated circuits increased, CMOS based VCOs were designed and constructed to operate at considerably higher frequencies of up to around 300 MHz. Metal-oxide semiconductor (MOS) technology is virtually the standard for digital circuits that are used for computers and telecommunications. Increasingly, CMOS (complementary MOS) technology is utilized in these applications.

Voltage controlled oscillators are used in many applications to produce an oscillating signal having a frequency defined by an input voltage. A voltage controlled oscillator is a critical component in almost every digital communications systems. Voltage controlled oscillators are often used to generate local oscillator (LO) signals, which are used by transmitter and receiver subsystems for frequency up conversion and down conversion, respectively. VCOs are also used to generate clock signals for synchronous circuits. Wireless subscriber communication units, for example those operating in a cellular telephone system such as the global system for mobile communications (GSM) use oscillator circuits to generate the radio frequency signals. Wireless radio communications systems generally transmit voice and/or other data between transceivers, which may be fixed and/or mobile radio communications terminals, via the propagation of radio frequency (RF) electromagnetic waves. Such applications desirably utilize stable and accurate circuits for generation of oscillating electrical signals used in creating signals in a form suitable for transmission over the wireless system. Most circuits designed for network communication are configured to accommodate multi-standard and multi-rate data streams. These circuits utilize dual or multiple VCO circuits. In cellular telephone applications, voltage controlled oscillators are used to established a channel frequency within one or two bands according to the GSM digital telephone standard. In order to provide local oscillator signals, as well as transmit carriers, tunable voltage controlled oscillators are implemented in a frequency synthesizer application. A cellular phone in a wireless communication system may employ multiple VCOs to generate local oscillator (LO) signals for transmitter and receiver circuitry and clock signals for digital circuitry. Modern electronics often require a VCO to operate over large frequency ranges. The voltage-controlled oscillator (VCO) is an important building block in phase-locked loops, clock recovery circuits, and frequency synthesizers. High frequency and radio frequency (RF) voltage-controlled oscillators can be implemented monolithically as LC oscillators, as relaxation oscillators and ring oscillators. Some applications require the voltage controlled oscillator to rapidly change the carrier frequency. These types of oscillators are referred to as agile voltage controlled oscillators. Voltage-controlled oscillators are utilized within many synthesizer and tuner circuits, such as those found in TVs and in wireless communication devices. Greater VCO stability with respect to noise sources provides for a more stable VCO output signal, thus for instance, enabling extraction of data from a multiplexed electrical signal. A high frequency voltage controlled oscillator (VCO) is extremely important for applications such as processor clock generation and distribution, wired and wireless communication, system synchronization and frequency synthesis.

Voltage controlled oscillators (VCOs) are used within phase-locked loops (PLL) for clock synthesis, bit synchronization, etc. A PLL circuit is a circuit that generates a periodic output signal that has a constant phase relationship with a periodic input signal. PLL circuits are used in many types of measurement, electromechanical control, and microprocessor and communication applications. PLL circuits are attractive in modulation applications due to their combination of controllable modulation and stable and adjustable carrier frequency. Using a PLL or delay-locked loop (DLL) has advantages in a battery powered system because a PLL is able to receive a lower reference frequency from a stable oscillator to generate system clock frequencies. A PLL also allows changing the system clock frequency without changing the reference frequency. Phase-locked loops are commonly used in a feedback configuration to generate an output clock signal having a desired output frequency that is derived from an input reference signal. Phase-locked loops/synthesizers are often used in microprocessors and in wireless transmitters and receivers to achieve desired operating/output frequencies based upon relatively low frequency input signals. Phase-locked loops have been widely used in high-speed communication systems because PLLs efficiently perform clock recovery or clock generation at a relatively low cost. Among the function blocks in a PLL, VCO is a crucial circuit for determining the characteristics of a PLL. Voltage controlled oscillators (VCO's) have long been used as components within phase locked loops (PLL's) and synthesizers, which in turn have had wide applicability, particularly in the area of clock frequency generation. A phase-locked loop includes a phase comparator for comparing the clock signal generated by the PLL with the reference pulse signal, a low pass filter for generating DC voltage in accordance with the comparison result of the phase comparator, and a voltage-controlled oscillator for generating the clock signal from a control voltage, or the DC voltage from the low pass filter. By utilizing a highly stable and accurate source, such as a voltage controlled oscillator, to generate the oscillating input signal, and various frequency multipliers and dividers, a stable and accurate oscillating output signal can typically be generated across a range of frequencies. The VCO in a PLL typically has a range over which the frequency of the VCO may be voltage-controlled.