

TECHNICAL REPORT

FCC ID DCP7FGAERK103

Name and address of Applicant:

Alarm Electronics Manufacturing Co. Inc.
44 All Healing Springs Road
Taylorsville N. C. 28681
Ph. (828) 632-3365

Prepared By:

Edgar L. Bonner

Installation and Operating Instructions:

A copy of the Model PWX-2Y "Installation and Operating Instructions" is attached to this report.

DESCRIPTION OF CIRCUIT FUNCTIONS:

POWER SOURCE: 9V Battery stack
3 lithium cells type CR1220

GENERAL OPERATION:

The PWX-2Y is intended for use with receivers:

FCC ID DCP7FG800, DCP7FGAER902L, DCP7FGAER904L, DCP7FG811

The format of the transmission is compatible with the receivers.

The PWX-2Y is a two button manually operated transmitter for use in security alarm systems. It is designed to be used as remote on/off control and for panic/emergency alarm activation.

There is no power connected to the transmitter battery power source until such time as the transmitter is activated by one of two manual push button switches. Pressing one of the switches applies power to the transmitter and commences operation. The transmitter will transmit as long as the button is pressed and ceases transmission when the button is released.

CIRCUIT OPERATION DETAIL

Referring to the schematic diagram:

Power is applied to the transmitter by activating switch S1 or switch S2. When power is

applied the supply current to the encoder is passed through resistor R3 which drops the operating voltage to the encoder IC1 to approximately 5 volts. If switch S2 is activated voltage is applied directly to the encoder. If switch S1 is activated the voltage for the encoder is passed through the base-collector junction of transistor Q2 to the encoder and voltage is also passed through the base-emitter junction of Q2 to encoder pin GP1 and resistor R6. In this manner a voltage present on GP1 is a logical indicator to the encoder that switch S1 has been activated and no voltage present on GP1 is the logical indicator that switch S2 has been activated.

The transmitter encoder encodes a different key code sequence for S1 activation or S2 activation. Resistor R5 serves to maintain the pin GP5 at (-) potential. Capacitor C6 is a power supply by-pass.

When power is applied to the encoder power is also applied to the gate of Q3. Q3 is a N-channel MOS FET. A positive voltage on the gate causes Q3 to conduct and effectively connects zener diode DZ1 to resistor R4 and the input to encoder pin GP2. DZ1 is a 6.8 v zener diode through which the battery voltage is monitored. When the applied input voltage is below the zener diode voltage plus the encoder trip voltage (approx 1 volt) a "Low battery" condition is detected at the encoder input GP2 and the transmitter will set the low battery flag bit in the transmitted data stream.

The encoder generates the serial digital data output on pin GP0. This digital data is applied to the input of the RF stage transistor Q1 via resistor R2. This causes the RF to be gated on and off with the digital output of the encoder

The RF section consists of a crystal oscillator where the primary tuning element L1 is also the primary radiating element (antenna) of the transmitter.. Capacitors C1, C2, and C3 tune the resonant circuit to the same frequency as the crystal CRY1 which is in the feedback loop. Capacitor C5 is required to lower the feedback voltage and minimize harmonics. The frequency of operation is thereby determined by the crystal frequency. The crystal is a two port SAW type device. The transmitter is aligned at the factory and there are no provisions for user adjustment of the operating frequency.

After testing and tuning are complete the entire assembly is sealed. There are no user accessible parts and batteries are not replaceable. Because of the low current drain the batteries can be expected to last in excess of 10 years or 50,000 operations..