

APPLICATION FOR CERTIFICATION: MODEL PD-102W and PWX1 TRANSMITTER

TECHNICAL REPORT

FCC ID DCP7FGPD102W

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 PWX1 "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 PWX1 is intended for use with receivers:

FCC ID DCP7FG800, DCP7FGAER902L, DCP7FGAER904L, DCP7FG811

The format of the transmission is compatible with the receivers.

The PWX1 is a single 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 manually pressing the switch. 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 SW1. When power is applied the supply current to the encoder is passed through resistor R4 which drops the operating voltage to

the encoder IC1 to approximately 5 volts.

Capacitor C3 is a power supply by-pass for the encoder IC1. Resistor R2 and Capacitor C4 set the clock frequency of the encoder.

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 RB0 and the transmitter will set the low battery flag bit in the transmitted data stream.

Because the current drain of the encoder is very low at low voltages Resistor R7 is required to discharge the various capacitances on the network so the encoder will properly reset when the button is rapidly released and pressed again.

LED1 is a visual indicator that the transmitter is operating. Current is supplied to LED1 via resistor R6 when the switch is activated.

The encoder generates the serial digital data output on pin RA1. This digital data is applied to the input of the RF stage transistor Q1 via resistor R3. 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 and C2 tune the resonant circuit to the same frequency as the crystal CRY1 which is in the feedback loop. Capacitor C5 lowers 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.

.