

# 1. The Product

## 1.1 Outline

The conveyor motor control transmitter is used for wireless bi-direction control of a motor which moves a garment conveyor.

It is part of a system which also includes an RF receiver. The receiver, which is located in the conveyor motor control, receives, demodulates and decodes the RF transmission from the remote. This decoded transmission controls the motor.

## 1.2 Appearance

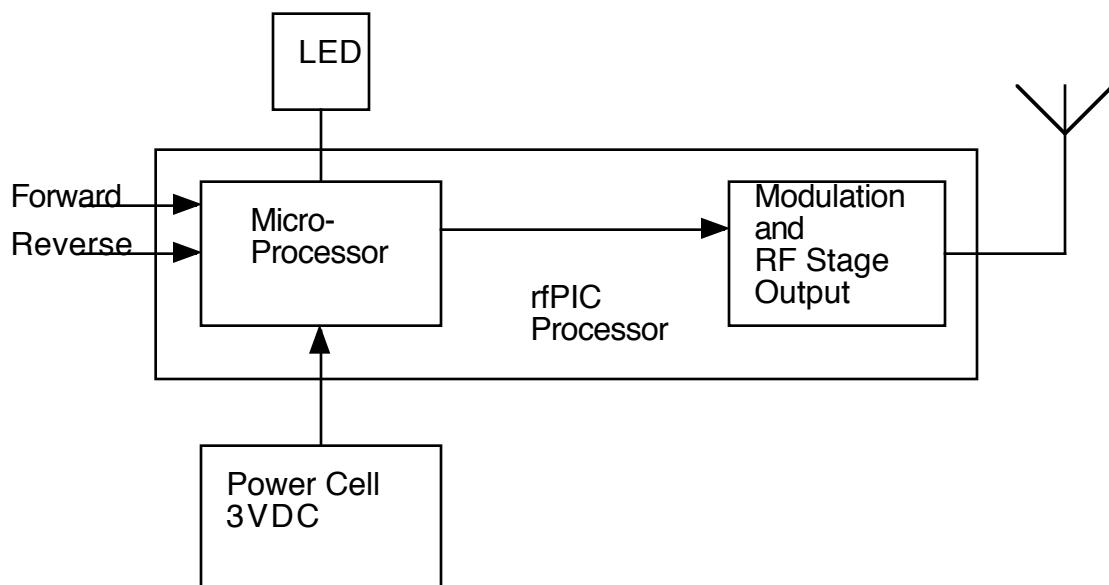
The motor switch consists of a rectangular plastic box with a single pole, double throw momentary switch mounted on the top. The size is approximately 4 5/8" (long) x 3" (wide) x 1 5/8" (high) (117mm x 76mm x 41mm).

There is a single red LED internal to the case. The LED indicates when the switch is transmitting.

## 1.3 Transmission Format

The signals transmitted from the remote are encoded using PWM, employing 72 bits of data, with a modulation frequency of 833Hz and 100% amplitude modulation.

## 1.4 General Block Diagram



## **2 Operating Instructions**

### **2.1 Normal Operation**

In response to a single press of a button, the transmitter will send a two messages indicating the direction of movement. Each message requires 121mSec to transmit. Once the message is sent, the transmitter turns off. If the button is held, the processor waits for about 2.5 seconds and then transmits another pair of messages. When the button is released, the transmitter sends 3 messages, each 121 mSec long, instructing the motor to stop. The receiver will timeout when no message is received and will stop the motor.

### **2.2 Test Modes**

Connecting all three wires together, the same as pushing both buttons, will place the transmitter in a test mode. In test mode, a fully modulated carrier is sent as long as the buttons are pressed.

## **3 Operation Description**

### **3.1 Idle Mode**

When no buttons are pressed, the 3VDC battery supplies a small standby current to the processor chip, which is in a sleep mode. No power is supplied to the Modulation and RF stage.

### **3.2 Button Pressed**

When any button is pressed, the microprocessor encodes a 72 bit message indicating the direction of motion requested. The processor enables the RF stage. Once the RF stage is enabled, the 72 bit message is encoded as a PWM stream and transmitted twice. After the message is transmitted, the RF Stage is disabled.

### **3.4 Button Released**

When the button is released, the microprocessor encodes a 72 bit message directing the motor to stop. The processor enables the RF stage. Once the RF stage is enabled, the 72 bit message is encoded as a PWM stream and transmitted three times. After the message is transmitted, the RF stage is disabled.

### **3.3 Button Held**

As long as the button is held, the microprocessor will continue to transmit messages indicating motor movement every 2.5 seconds.