

## *Go Time's* Advanced MEMS G-Sensor Technology

*Go Time's* Advanced G-Sensor technology not only counts steps, it does so precisely and reliably using the best technology available. And with *Go Time*, you have the freedom to wear the world's most advanced pedometer anywhere you like.

### How do pedometers work?

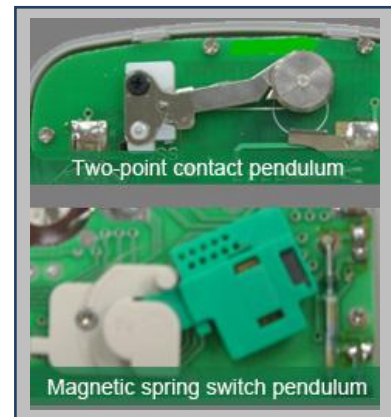
A pedometer is a small electronic device that counts steps as you walk, jog or run. They have a motion-sensitive electrical circuit that switches on and off, activating a digital counter. There are two types of movement sensors used in pedometers: the pendulum and the accelerometer.

### Pendulum Pedometers

Most pedometers use a simple spring-levered pendulum or swing-arm system that opens and closes an electronic circuit thus adding steps to a counter. In fact, pendulum pedometers were the first mechanical pedometers to be built and were later adapted to electronics. At each step, the swing-arm moves downward and the circuit is closed thus allowing energy to flow to the counter, adding a step. The swing-arm then returns to its original position and the circuit is interrupted.

Some pendulum pedometers use a two-point contact swing-arm while others use a magnetic spring proximity switch instead of a contact switch. Both operate in basically the same way. Cheap pendulum pedometers use hairsprings which lose their calibration quite quickly. More expensive pendulum pedometers use coiled springs that are more durable.

Quality pendulum pedometers are usually quite accurate. Their disadvantage, however, is that they must be worn at the hip on a belt or waistband. If the pedometer is not positioned correctly, accuracy is greatly affected. Also, the spring regulating the swing-arm tends to stretch with use thus affecting the pedometer's accuracy over time.



### Accelerometer Pedometers

Accelerometers measure acceleration by sensing how much a mass presses on something when a force acts upon it. Pedometers that use accelerometers sense the

position of the body and the impact of each step you take. There are two kinds of accelerometers: the piezoelectric accelerometer and the G-sensor.

### *Piezoelectric Accelerometers*

The piezoelectric accelerometer uses a horizontal lever with a weight on the end. This weight rests on a quartz crystal. When the accelerometer moves, the weight compresses the crystal and generates a small electric voltage. The greater the force present, the greater the current generated. Therefore, when someone wearing a piezoelectric pedometer walks, the lever compresses the crystal and the current generated activates the step counter.



The advantages of this accelerometer is that it allows a user to carry the pedometer in a position other than the hip. And when worn correctly, it is quite accurate. However, because it is a uniaxial, two-way device (it can measure only linear acceleration and deceleration), its positioning on the body is limited. It must be firmly attached to the body so it stays upright, preferably in-line with the knee. If it is placed sideways, is tilted or shifts in any way from an upright position, its accuracy will be greatly reduced. Furthermore, piezoelectric accelerometers have a high energy consumption which shorten battery life.

### *G-Sensors*

G-sensor accelerometers use multi-axis detection. Most use 2-dimensional axes to sense not only vertical movement (the up and down motion of your body when you walk or jog) but forward momentum as well. They use microchip sensors that detect movement and emit electrical pulses when changes in movement are perceived. That means that devices using G-sensor accelerometers are more accurate and their placement on the body is much more versatile.

## *Go Time's Advanced G-Sensor Technology with MEMS 3-dimensional Sensors*



Our **Advanced MEMS G-Sensor** uses a high performance multiple control unit (MCU) that analyzes the sensor data based on highly-researched walking and running models.

Unlike piezoelectric models, our advanced G-sensor has very low battery consumption due to its cutting-edge IC programming, and its **3-axis detection system** makes it extremely accurate no matter what position the device finds itself in.

And unlike many other G-sensor pedometers that usually senses motion on two axes, our MEMS G-Sensor detects forward, vertical AND side motions (roll, yaw and pitch). What difference does a third axis make? It enables our advanced G-Sensor software to compare this three-dimensional data to walking, jogging and running models to ensure that each step counted is a true rhythmic step and not an invalid movement or vibration. *Go Time* can distinguish true steps from other motions thus counting only those movements that are true step movements.

***This makes *Go Time* one of the most accurate pedometers on the market.***

The advantages of our Advanced G-Sensor accelerometer and proprietary IC program is its outstanding accuracy, its low-power consumption and the freedom it gives the wearer to carry it anywhere, at the waist, around their neck, in a pocket or a bag. The disadvantages are... none!

With *Go Time*, you know that every step you take is recorded consistently so that you can precisely capture your daily/weekly activity. We use the best technology to bring you accuracy and reliability. Everytime.

