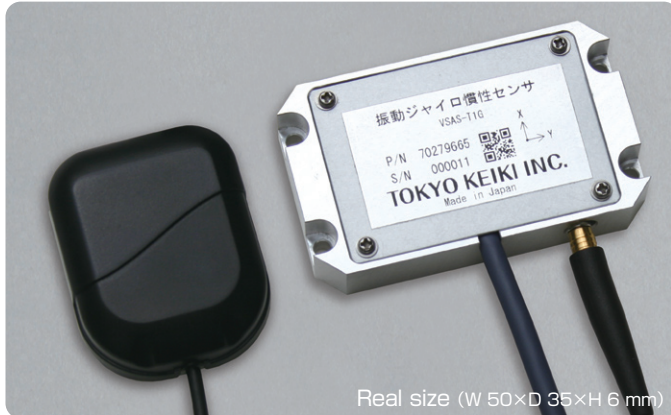


Position and Attitude Sensor VSAS-T1G



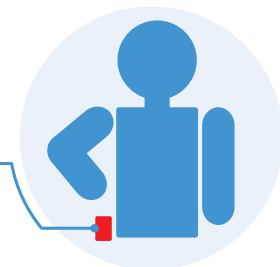
Less than half the size of a credit card and smaller than the VSAS-2GM sensor, the VSAS-T1G sensor outputs X,Y, Z-axis acceleration; X,Y, Z-axis angular rate; roll and pitch attitude angles and azimuth in realtime.

The VSAS-T1G can operate off battery power and is wearable. In the example described herein, the sensor measures the movement of a person walking on a level surface and negotiating stairs.

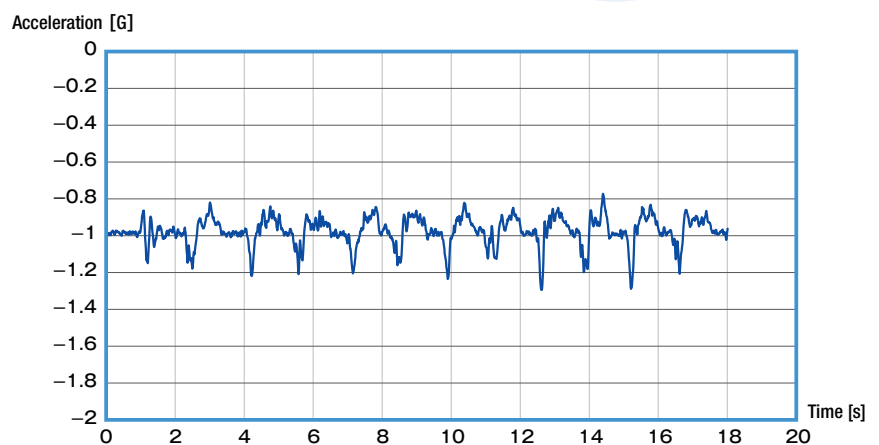
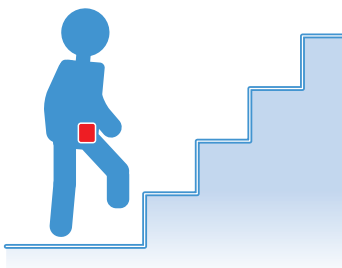
Vertical acceleration

measurement of person ascending and descending stairs.

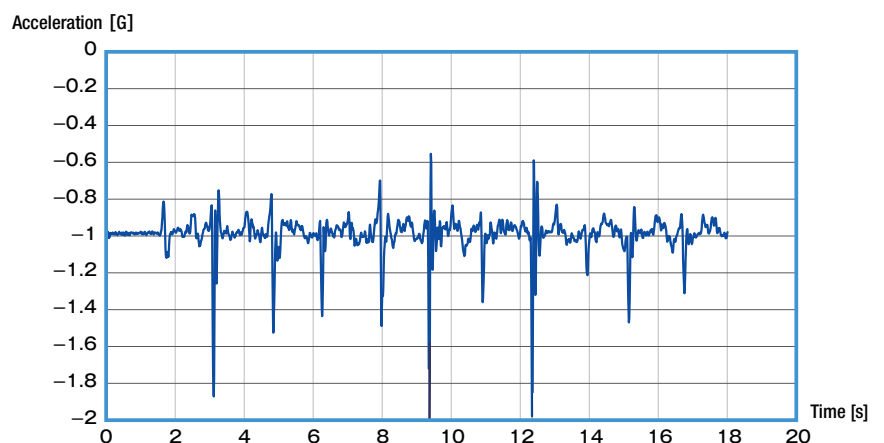
- The VSAS-T1G sensor is worn on a hip belt and the X-axis is oriented in the direction of advance.



Ascending stairs



Descending stairs



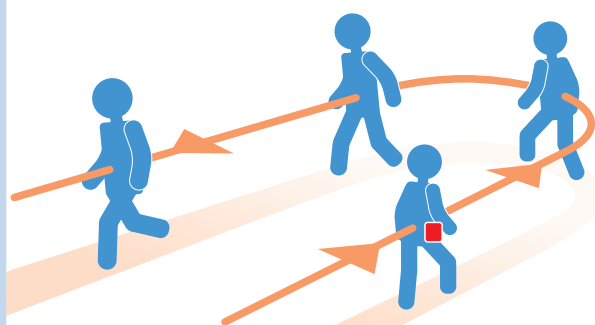
*Lower peaks reflect the impact of the foot as it comes into contact with the floor.

- Acceleration descending stairs is more than 3 times that in the ascending direction.

Position and Attitude Sensor

VSAS-T1G

■ Measurement of forces acting on person walking on a level surface



Hip belt worn VSAS-T1G sensor with X-axis oriented in the direction of advance.

Subject walks forward ten meters, executes a 90 degree turn, then another 90 degree turn and returns to his starting point.

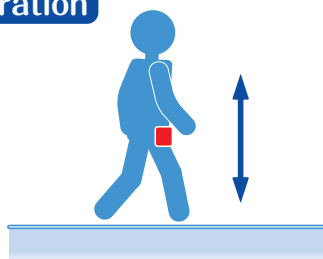
VSAS-T1G measurement

(1) Vertical acceleration

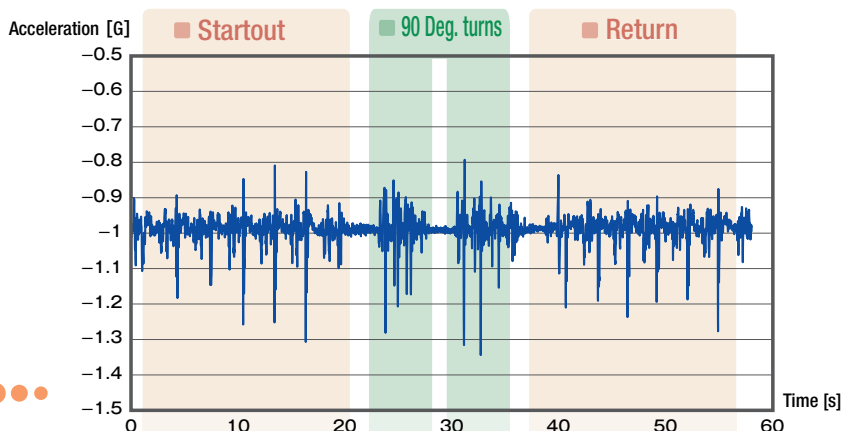
(2) Angular rate

(3) Azimuth

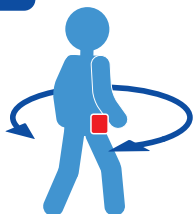
1 Vertical acceleration



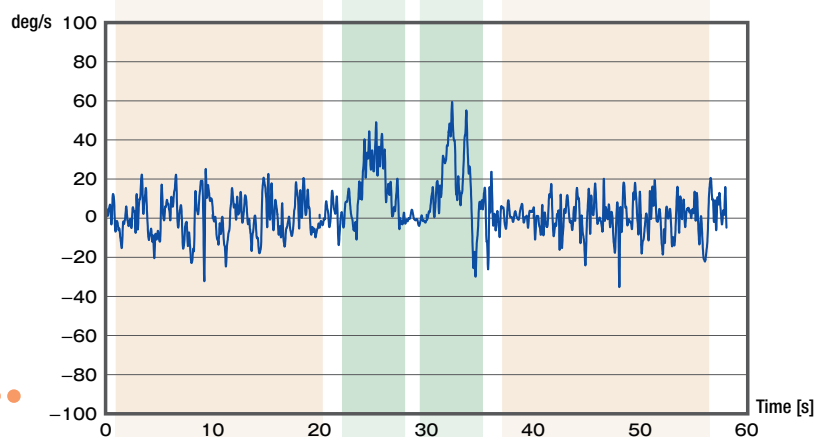
Larger vertical acceleration apparent during downward movement.



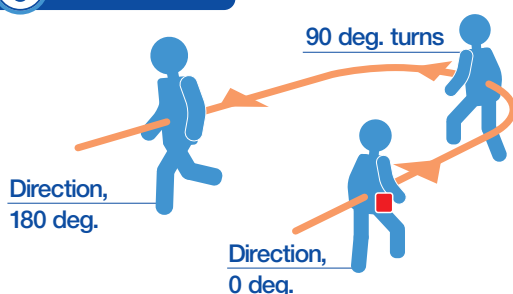
2 Angular rate



As the subject walks, the hip sways to the left and right slightly. The angular rate when the subject pivots 90 degrees to change direction is more than twice the angular rate walking forward.



3 Azimuth



VSAS-T1G data clearly indicates azimuth (direction of travel).

