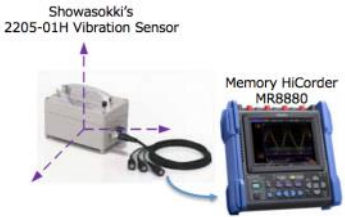
Measure the Vibration of an Elevator to Analyze Ride Comfort

Elevator Ride Quality

Do you get nervous when the elevator makes noise, suddenly jerks, rattles or shakes? Many of us take elevator ride comfort for granted, but in fact precise maintenance and control are required to minimize rider anxiety and maintain overall equipment longevity. There are even international standard such as ISO 18738-1:2012 (Measurement of Ride Quality -- Part 1: Lifts (elevators)) to help elevator manufacturers improve passenger experience by recommending measurement and processing methods for noise and vibrations. Of particular relevance to passenger comfort is the evaluation of vibration in terms of peak-to-peak levels.



Measure and Analyze Vibration with the MR8880 Memory HiCorder and Vibration Sensor

The Hioki MR8880 Memory HiCorder is a general purpose waveform recorder that can be paired with a commercially available vibration sensor to measure the vertical acceleration and vibrations of a moving elevator in the X, Y and Z directions, letting maintenance personnel utilize the memory recorder in yet another building maintenance application to maximize the recorder's potential. Input the analog signals from a three-directional vibration sensor into any of the 4 built-in channels of the MR8880 to capture the vibration levels in terms of waveforms in order to clearly identify the direction, time and period of excessive vibrations.

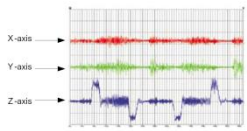
Benefits of Using the MR8880 Memory HiCorder

* In the example above, the MR8880 is paired with Showasokki's 2205-01H Vibration Sensor, both of which are powered by rechargeable batteries, making the system completely portable.

* Use the sensor and MR8880 to easily capture vibrations in the X and Y axes caused by the opening and closing of doors and vibration waveforms caused by vertical movement of the elevator

* Analyze the DC acceleration waveforms representing vertical movement with the Z axis

* Optional printer lets you output a report onsite
* Save data to the CF card to analyze later on a PC using the free bundled WaveViewer software



Identify Latent Problems that Can Turn Serious

Although there is an international standard that recommends measurement methods and processes, the standard does not attempt to establish an acceptability level for rider quality because the tools and methods to test rider comfort will continue to change and improve over time. Nevertheless, measuring elevator vibration offers you the ability to evaluate and troubleshoot issues, analyze problems, and ultimately improve ride quality on an individual elevator basis. Taking regular vibration tests as part of your building maintenance program will let you identify latent problems, such as rail misalignment, and fix them before they become serious and even life-threatening.

MR8880 Memory HiCorder : https://www.hioki.com/en/products/detail/?product_key=5543

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