Jewell Instruments

LCF-501-R And The Panda Express

- **Objectives:** Measure and dampen sway
- **Solution:** Jewell Instruments **LCF-501-R**
- **Benefits:** High-precision, dampening, and ruggedness
- **Results:** Smooth and safe passenger transport

Overview

Chengdu's history dates to at least the 4th century B.C., when it served as capital for the Shu Kingdom. Chengdu is a hub for southeast China. Artifacts from that dynasty are the focus of the Jinsha Site Museum. The city is also home to the famous Chengdu Research Base of Giant Panda Breeding, a conservation center where visitors can view endangered giant pandas in a natural habitat.

Jewell Instruments LCF-501-R

A vision for the future of transportation, China's Sichuan province is a suspended monorail train emblazoned with the image of a giant panda. This Sky Train, also referred to as the Panda Express, is battery-powered hanging train which took only four months to construct, is green, inexpensive, safe, and quiet.

The Sky Train or Panda Express is the first suspension train of its kind in Chengdu, and it shuttles visitors and tourists to the China Panda Conservatory and was designed and painted and to look like a Panda bear. This new suspension train is a train suspended, or hanging from top rail. The Panda Express - billed as the world's first new-energy suspension railway by Chinese media - runs on lithium-ion batteries, which is less harmful to the environment than traditional energy sources.

The construction cost of a suspended train is one-fifth to one-eight of a subway's building cost. The Panda Express, suspended at 16 feet high, zips along the elevated monorail at speeds up to ~ 40 mph, carries 230 passengers, and has a glass bottom with a 270-degree visibility (as the top is not transparent).

Phone : +1 (603) 669-6400

Email : info@jewellinstruments.com

Web : jewellinstruments.com

Project

The Rail company responsible for the Panda Express, the Zhongtang Sky Train Group, selected are two LCF-501-Rs installed in the bottom left of the system electronics cabinet. This is done in 2 of the train cars for the control system and lateral motion for sway damping. The initial tests were in 2018: 2 of our LCF-501-R inclinometer per train set, 4 in total each train. The Panda Express is the first of several suspended trains in Chengdu, and one of the first operational in China

The LCF-501-R is a CENELEC and AREMA certified accelerometer with 1μrad resolution. It Fluid-damped Taut Band Torsional suspension design is ideal for high shock and vibration environments. The internal J301 optical module offers great repeatability. The LCF-501-R comes with a special filtered connector used to reduce radio frequency interference (RFI) and electromagnetic interference (EMI) in Rail systems and incorporates and internal PCB board for transient voltage suppression. The LCF-501-R utilizes closed loop technology to produce a highly accurate output, can withstand shock levels up to 1500g, 0.5msec, ½ sine, and is available in measuring ranges from ±0.25g to ±5g

Lithium-ion powered and “maglev sky trains” that floats in the air using permanent magnets are getting extremely popular in China, and growth in this market is expected to continue. The Panda Express is one of

the first of many planned suspension trains designed as a sightseeing attraction for various natural areas around China.

Suspension railways date back almost 200 years, with cities like Memphis, Dortmund and Chiba all home to suspended monorail systems. However, China’s panda-shaped design will be the first lithium battery-charged suspension train in the world and will have an estimated cruise time ranging from 2 to 4 hours per charge.

With congested traffic an increasingly serious urban malaise, China has stepped up its efforts in seeking public transportation alternatives. One of the most creative designs was the transit elevated bus that can travel above traffic.

Shown are 2 of Jewell’s LCF-501-R Inclinometers

Phone : +1 (603) 669-6400

Email : info@jewellinstruments.com

Web : jewellinstruments.com