Application Note

Measurement of buildings protective structures

Industry: Civil Engineering / Structural Material Design

ScopeCorder DL950

ScopeCorder DL950

Background

In today's world of civil engineering, the increasing need for strong structures is eminent in the face of environmental impact that can affect the lifespan of the materials used.

Research on steel behavior under stress is undertaken in universities. Researchers perform loading and impact tests on steel structure that reinforces a building and acts as a column.

Challenge

The impact test is one of the testing methods used by researchers to find out the steel condition under stress.

This research needs an instrument that can measure multiple output signals from various sensors listed below figure at high speed. In addition, it is necessary to measure those different signals at the same time. The instrument must have the following features and capabilities:

- Measurement of sensor's outputs
  - Laser sensors
  - Displacement sensors
  - Load cell
  - Displacement sensors
  - Accelerometer
  - Strain gauge
- Multiple input channels (8 or more)
- High sampling speed
- Input signal filtering to reduce high frequency noise
- Signals analysis functions
- Large capacity memory

Solution and benefit

The DL950 can measure different multiple sensors' output signals required for this application at the same time and those captured signals can be displayed on one screen.

- **Multiple measurements with various modules**

  A single ScopeCorder can measure high-speed signals, acceleration and strain sensor's signals with corresponding modules.

- **Long record length**

  The DL950 has large memory (up to 8G points with /M2 option and 512GB SSD with /ST1 option).

- **Bandwidth filter**

  The DL950 has a LPF and digital filter to reduce high frequency noise.

- **Various analysis functions**

  There are various functions to help measurement and analysis, for example, zoom, real time math, and FFT.

The IS8000 integrated software supports the DL950 and allows remote monitoring and synchronization of high-speed camera image with data captured by the DL950 for more in-depth analysis of the test conducted.

New Modules

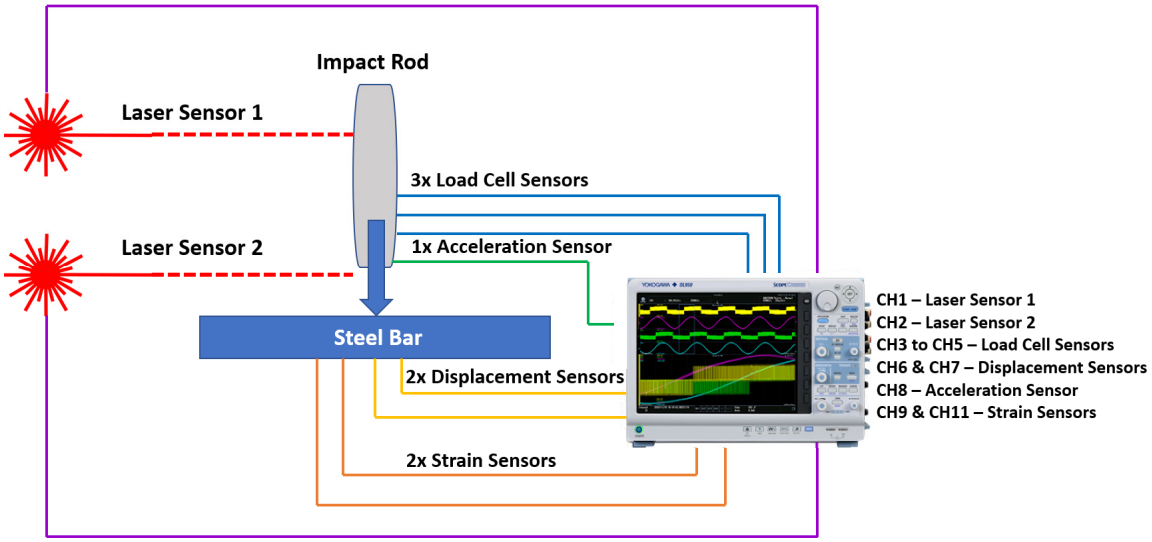
High-speed 200MS/s 14bit Isolated Module 720212

Number of channels: 2
Sample rate: 200MS/s
Bandwidth: DC to 40 MHz
Max. measurement voltage:
1000 V(DC+ACpeak)*
Resolution: 14 bit

4CH 10MS/s 16bit Isolated Module 720256

Number of channels: 4
Sample rate: 10MS/s
Bandwidth: DC to 3 MHz
Max. measurement voltage:
600 V(DC+ACpeak)*
Resolution: 16 bit

*When set 10:1 or use 100:1 probe



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