

Center of Gravity Testing for Robotics

Multi-Axis

Industry: Industrial Automation

Summary

Customer Challenge

The center of gravity represents the point where the entire weight of the robot can be considered to respond and act. It is a critical factor that determines the stability and balance of a robot, especially during operation.

Interface Solution

Interface suggests using their force plate option to install at the base of the robotic arm. Four 3-Axis Force Load Cells are installed between two force plates, then installed at the bottom of the robot. This creates one large 6-Axis Force Plate. The sensors force data is displayed and monitored with two BX8 Multi-Channel Bridge Amplifier and Data Acquisition Systems onto the customer's PC.

Results

Interface's 6-Axis Force Plate was able to successfully measure the robot's center of gravity.

Materials

- Four 3-Axis Force Load Cells
- Mounting Plates
- Two BX8 Multi-Channel Bridge Amplifier and Data Acquisition System with supplied software
- Robotic Arm
- Customer's PC

How It Works

1. Four 3-Axis Force Load Cells (creating one 6-Axis Force Plate) are installed between two metal plates, creating a force plate option.
2. The 6-Axis Force Plate is installed at the base of the robotic arm.
3. Reaction forces from the robotic arm are measured and monitored using the two BX8 Multi-Channel Bridge Amplifier and Data Acquisition Module. The center of gravity is found, and data can be displayed and recorded on the customer's PC or laptop.

