

MEASURING FORCES IN VACUUM TESTING LABS

interface
FORCE MEASUREMENT SOLUTIONS.

Vacuum environments are used to simulate the conditions that products and materials will experience in space or other high-altitude environments. These types of testing labs typically have a vacuum chamber that can be evacuated to an incredibly low pressure. The vacuum chamber is then used to evaluate products and materials for a variety of properties. Engineers use vacuum environments in testing for reducing contamination, improving heat transfer, and to decrease the weight of products. Using vacuum load cells is important for these types of tests.

Vacuum testing labs are used by a variety of industries, including aerospace, medical, and defense. These labs are common for material process testing and used in R&D. Vacuum testing helps to identify potential problems with products and materials before they are used in a real vacuum environment.

Not all load cells are designed for a vacuum environment. Understanding the specifications of the test plan will define the best type of measurement solution. Load cells designed for vacuum environments are built for this requirement or may need to be customized to ensure the performance specifications meet the testing requirements.

Venting an existing load cell can alter the performance and damage the cell. By designing the load cell with venting for use, we can ensure that it will meet the vacuum test range. Interface recommends that all our products used in this type of environment are designed, built, and calibrated for use in this environment.

The growing space economy demands robust testing and validation solutions for use in vacuum chambers. These specialized instruments play a crucial role in verifying the performance of spacecraft components, ranging from rockets to planetary rovers. By simulating the weightless conditions of space, they enable accurate measurement of force, weight, and torque, providing valuable data for research and development.

Interface can install thermocouples to work with the sensor to detect temperature in this type of testing environment. In fact, our engineers have designed load cells to package the thermocouples inside the form factor for convenience and performance benefits.

