



VISHAY PRECISION GROUP

Company Overview

www.vishaypg.com



Where the World Goes
for Precision Measurement and Control



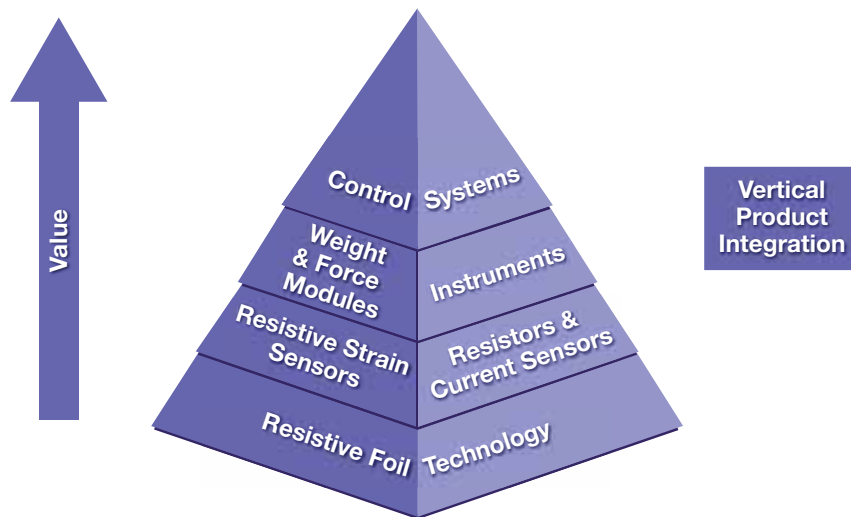
Industry Solutions through Vertical Integration

Vishay Precision Group (VPG) produces sensors based on resistive foil technology, and sensor-based systems. We provide vertically integrated products and solutions for multiple growing markets in the areas of stress measurement, industrial weighing, and manufacturing process control.

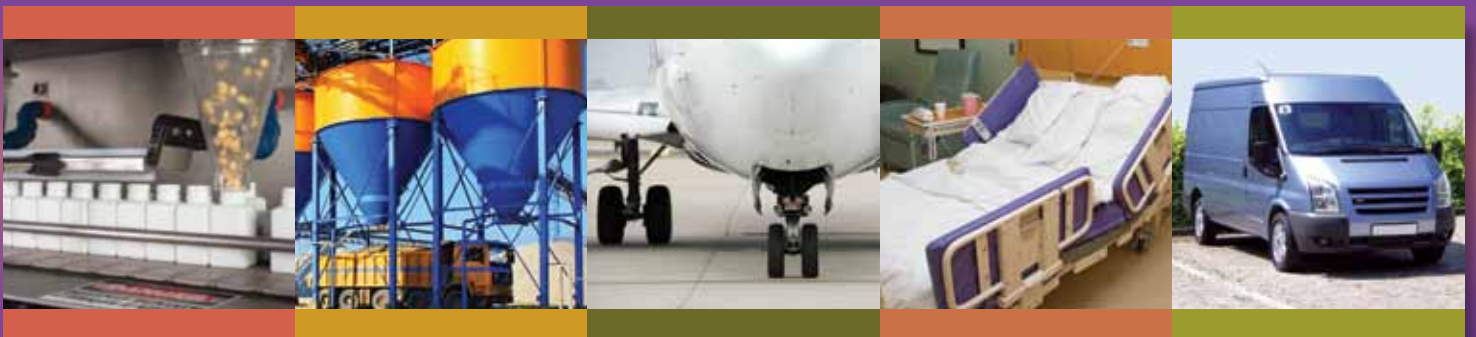
As a spin-off from Vishay Intertechnology, we have a decades-long track record of innovation in foil precision resistors, current sensors, and strain gages, which has served as a foundation for our more recent expansion into strain gage instrumentation, load cells and transducers, load cell modules, and complete systems for process control and on-board weighing.

Vertical Integration Strategy

Our growth strategy largely focuses on vertical product integration, using our foil resistance strain gages in our load cell products and incorporating our load cells and electronic measurement instrumentation (containing foil resistors) and software into our modules and measurement systems. Current sensing foil resistor products are also part of certain control systems that we manufacture. Many of our acquisitions in recent years have been directed towards furthering our vertical integration strategy, and we expect to continue to focus our acquisition program in this direction.



Proprietary resistive foil technology is the foundation for VPG technological and market leadership. The control of the added value chain provides the ability to optimize system solutions.



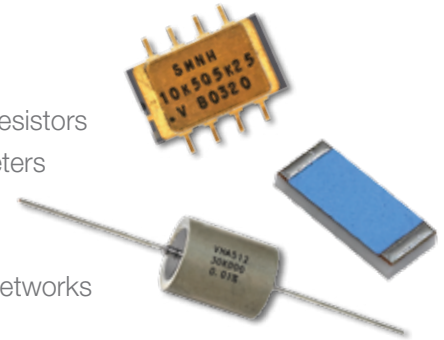


Bulk Metal® Foil Resistive Products

Bulk Metal® foil technology, first introduced in 1962, outperforms other resistor technologies for applications that require precision and stability. Vishay Precision Group's proprietary, ultra-precision Bulk Metal foil resistors and current sensing products provide exceptional temperature coefficient of resistance (TCR) characteristics and long-term stability through temperature extremes.

The foil resistors portfolio comprises:

- Surface-mount discrete resistors (SMDs)
- Through-hole (leaded) discrete resistors
- Voltage dividers, leaded and SMDs
- Resistor networks, leaded and SMDs
- Leaded and SMD current-sensing resistors
- Hermetically sealed resistors
- Trimming potentiometers
- Hybrid chips
- Custom-designed hermetically sealed networks

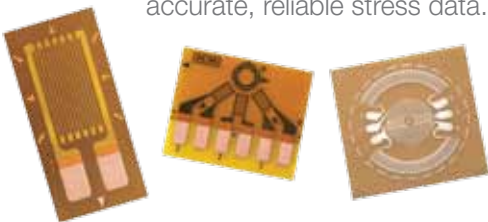


Vishay Precision Group offers a Prototype Fastlane Service (PFS). With this unique service, Bulk Metal foil precision resistors can be trimmed to any ohmic value (e.g., 123.45 Ω) within 76 hours delivery time.

Our foil resistors and current sensors are used in applications such as medical testing equipment, high performance audio equipment, precision measuring instruments, and aerospace and military applications.

Strain Sensors (Strain Gages and PhotoStress®)

The Vishay Precision Group Micro-Measurements product group is dedicated to the development, manufacture, and marketing of sensors for high-precision strain measurement. Micro-Measurements offers a full complement of strain gages, data acquisition systems, PhotoStress® equipment and coatings, and supplies necessary to obtain accurate, reliable stress data. Our products are used throughout the industrialized world — both in the practice of stress analysis and as the sensing elements in a wide variety of transducers for measuring physical variables (weight, force, torque, pressure, etc.).



Providing products and solutions for multiple growing markets in the areas of stress measurement, industrial weighing, and manufacturing process control



Strain-gage-based process weighing systems for batching and weighing in pharmaceutical production

For stress measurements testing, we are a supplier of electrical resistance strain gages and strain gage accessories. We are also experts in the development and manufacture of static and dynamic strain gage instrumentation. Additionally, as experts in the field of photoelasticity, we offer a wide range of PhotoStress® equipment and materials for this visual, full-field measurement technique of stress distribution.



Micro-Measurements also produces strain gages and installation accessories that are designed to meet the needs of load cell (weight transducers) manufacturers. Micro-Measurements Transducer-Class® gages have the special features and operating characteristics required for the economical production of precision transducers.



Areas of application include automotive, farm machinery, aircraft and aerospace, engines, pressure vessels, ship-building, office equipment, bridges, medical, appliances, building and construction.

Load Cell Modules and Instruments

The load cell product group includes Tedeo-Huntleigh, Sensortronics, Revere, and Celtron brands, which have been providing weighing and force measurement products for decades. Our load cells, in combination with our Micro-Measurements know-how, use the most advanced strain gage technology available. Our experience and design capabilities make it possible for us to provide a wide range of standard and custom-made products and solutions.



Throughout our worldwide operations, we have a commitment to uncompromising quality.



Load cells and weighing systems transform standard silos into scales for inventory or true weight detection



Wireless airplane system for weight and center-of-gravity measurements



Load cells and bonding services for in-bed patient weighing systems

Merging four leading load cell manufacturers into one company has created a product portfolio that ranges from a very broad line of load cells to weight instruments and digital weighing solutions.

Our strategically placed sales offices in Europe, the USA, and Asia provide full customer support. Multilingual sales teams enable us to communicate with customers in their native languages. We support a worldwide network of distributors and our sales engineering team provides technical support to customers in areas of product design and testing.

Our extensive transducer product offering includes solutions for the industrial and retail scale industry, process and high-speed weighing, construction and agriculture vehicles, and numerous medical products such as infusion pumps and hospital beds.



Process Weighing Systems

The Weighing Systems product group includes products from BLH and Nobel Weighing Systems, providers of weighing and force measurement systems for decades. We use our advanced Micro-Measurements strain gage technology and foil resistor products and know-how in all our transducers and instruments. Our experience and design capabilities make it possible to provide a wide range of standard and custom-made products and solutions.



We design and manufacture load cells, web tension blocks, instruments, hardware and software, and complete systems for weighing and force measurement. Our systems are used by a broad range of industries, including paper, steel, chemical, food, pharmaceutical, and petrochemical manufacturers, where our capabilities range from standard level measurements to the most complex applications. Our design teams work closely with you in almost any location in the world to provide customized load cells and instrumentation that meet your requirements.



Axle overload protection systems for light commercial vehicles improve operating efficiency and safety



Strain gages and instrumentation for precision measurements in crash testing



Reel Optimizing System measures and optimizes web tension to minimize wrinkles in paper and reduce scrap



Our systems engineers follow every project from concept to implementation. Our service teams, stationed in Europe, the US, and Asia, provide full support to customers and end users. Our teams provide complete installation and start-up services, and train local user teams on all routine maintenance and support jobs. Our systems are guaranteed for up to several years and are accompanied by a full package of documentation and drawings.



On-Board Weighing Systems

The Weighing Systems product group also includes PM Onboard and SI Onboard, providers of on-board weighing (direct weighing of trucks and vans as you load and drive) and overload protection systems for decades. Our systems integrate strain gages, foil resistor, and load cell technology, advanced electronic hardware and software, back-office software, and wireless capabilities into weighing solutions for fleet operators. Our experience, combined with our design and production capabilities, make it possible for us to provide a wide range of standard and custom-made solutions.



Our on-board weighing systems are used by the forestry, waste management, aircraft, and aggregate markets.



Highly stable Bulk Metal® Foil resistors and force measurement systems for oil and gas drilling operations



Bulk Metal® Foil resistors deliver high reliability, ultra-high precision, and long-term stability in demanding military, avionics and space applications



Transducer-Class® strain gages for manufacturers of scales



Product Listing

Bulk Metal® Foil Resistive Products

Strain Gage Transducers and Stress Analysis Systems

- PhotoStress® ■ Strain Gages ■ Load Cells ■ Weight and Strain Indicators
 - Process Weighing Systems ■ On-Board Weighing Systems
 - Web Tension Weighing Systems ■ Data Acquisition Systems
 - Specialized Strain Gage Systems

Brands

Bulk Metal® Foil Resistive Products

- Vishay Foil Resistors ■ Alpha Electronics ■ Powertron

Micro-Measurements

- Micro-Measurements

Load Cells

- Celtron ■ Revere ■ Sensortronics ■ TedeA-Huntleigh

Weighing Systems

- BLH ■ Nobel Weighing Systems ■ PM Onboard ■ SI Onboard



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