

**BLH NOBEL**  
A VPG Brand

**HIGH-PRECISION  
WEIGHING  
SOLUTIONS FOR  
PHARMACEUTICAL  
PRODUCTION**





Blue vertical column

VPG Transducers  
8  
www.vpg.com

Load cell  
KIS-1  
200 kN  
Vishay Nobel  
SE-401 27 Kungälv  
SWEDEN

CE  
VPG  
KIS-1  
200 kN  
Vishay Nobel  
SE-401 27 Kungälv  
SWEDEN

Orange label with technical specifications

Blue cable with technical markings

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# MAKE EVERY BATCH COUNT

Pharmaceutical production depends on precise control at every stage of the process. From raw material intake to final batch completion, even small measurement deviations can affect product quality, compliance, and yield. In regulated environments where traceability is essential, and batch loss can carry significant cost, weighing systems must perform consistently under demanding conditions. Factors such as vibration, thermal expansion, and shifting loads add further complexity, increasing the risk of instability and process disruption.

BLH Nobel meets this challenge with weighing solutions designed for consistent, dependable performance in pharmaceutical production environments. Built on decades of application experience, our systems support stable measurement, straightforward integration into plant operations, and reliable long-term performance, helping manufacturers maintain control, reduce risk, and keep production running.



# WHY ACCURATE WEIGHING MATTERS

Pharmaceutical manufacturers require highly accurate, reliable, and traceable weighing of raw and in-process materials to ensure consistent quality, production efficiency, and regulatory compliance.



## **Production continuity and batch protection**

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Unplanned interruptions can result in lost batches and significant financial impact.



## **Stable measurement under real process conditions**

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Vibration, thermal effects, and uneven loads can compromise measurement accuracy.



## **Full material traceability and compliance**

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Accurate measurement supports compliance with FDA requirements and audit readiness.



## **Seamless integration into plant control systems**

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Connecting weighing systems to PLC/DCS environments can be complex and resource-intensive.



## **Efficient calibration and reduced maintenance burden**

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Frequent calibration interrupts production and increases maintenance effort.



## **Centralized monitoring and process visibility**

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Centralized data access supports process control and diagnostics, as well as operational insight across the plant.

## Solution overview

# RELIABLE WEIGHING SOLUTIONS FOR CRITICAL PRODUCTION ENVIRONMENTS

BLH Nobel solutions for pharmaceutical manufacturing are designed to support accurate, stable, and traceable weighing across production processes.

Our solutions are built around KIS load cells and weigh modules, which feature a double-cantilever design that ensures reliable performance under real process conditions, including vibration, thermal expansion, and shifting loads.

KIS load cells and weigh modules can be connected to existing or third-party instrumentation, or provided as an integrated solution with BLH Nobel process instrumentation. Integration into PLC/DCS environments enables real-time monitoring, process control, and consistent data visibility across production operations.

### Our weighing systems are ideal for:

- Tank weighing
- Vessel and reactor weighing
- Silo and hopper weighing
- Batching processes



## GET THE BLH NOBEL ADVANTAGE



### Proven reliability that minimizes downtime and protects production

Delivering dependable performance for continuous production, with stable operation and reduced calibration requirements.

- Decades-long mean time before failure (MTBF) supports continuous production
- Infrequent calibration minimizes interruptions
- Robust design ensures stable operation in demanding process environments
- Extensive use in pharma installations with critical uptime requirements



### High accuracy and repeatability for consistent production control

Providing accurate, stable measurement across vessels and process conditions.

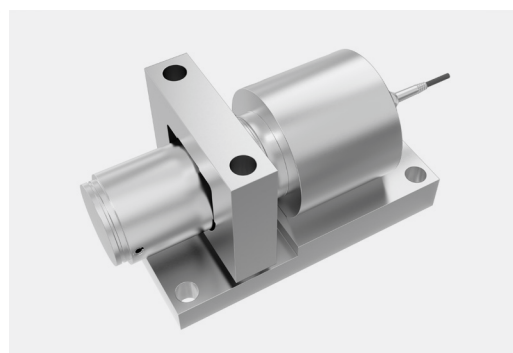
- High precision and repeatability in process applications – one of the highest in the industry
- Stable measurement over time (minimal drift)
- Consistent measurement across multiple measurement points and vessels
- Suitable for regulated production environments



### Easy, flexible integration

Built for quick, simple implementation in new or existing equipment and systems.

- Supports BLH Nobel and third-party instrumentation
- Easy integration into PLC/DCS systems via fieldbus
- Enables retrofit of existing tanks, silos, and vessels
- Suitable for new plant builds and expansions



### Long track record in pharmaceutical production applications

Widely deployed in global pharma manufacturing across complex process environments.

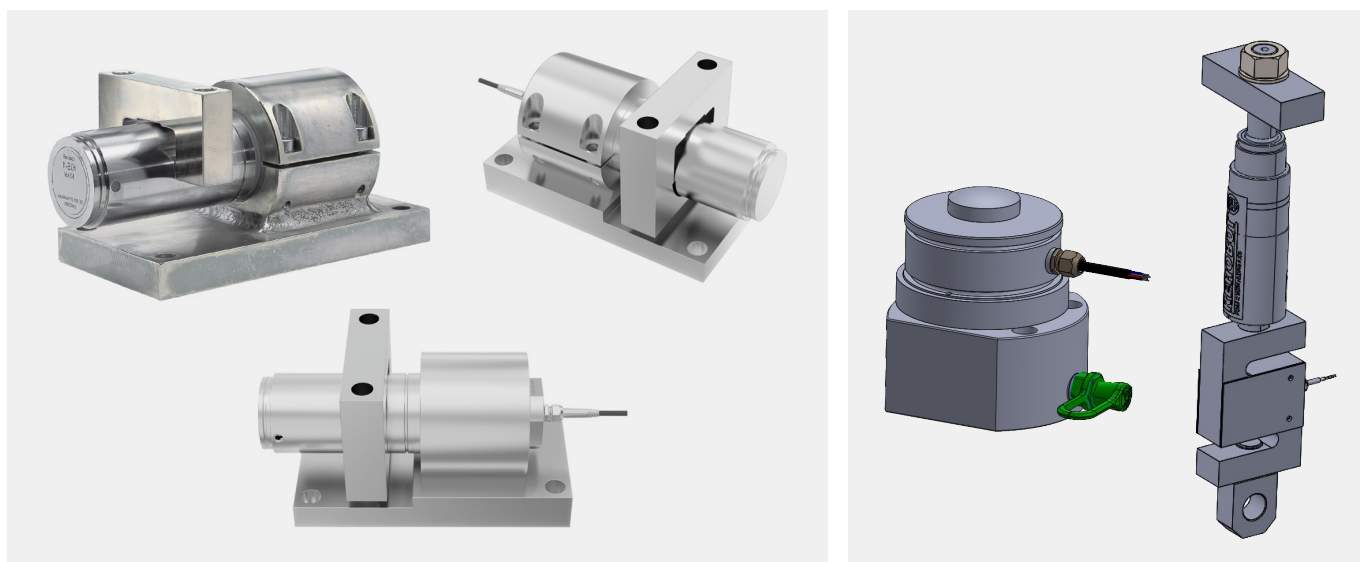
- Decades of experience in process weighing for pharma production
- Installed base across major pharma companies in the U.S. and Europe
- Successfully deployed in large-scale and complex projects
- Long-term measurement performance across tank, reactor, and batching applications

## Product details

# KIS LOAD CELLS AND WEIGH MODULES

As the core of BLH Nobel Pharma Solutions, KIS load cells and weigh modules are designed to deliver stable, high-accuracy measurement under real process conditions. Their double-cantilever (dual-beam) design minimizes sensitivity to off-axis loads and mechanical disturbances, ensuring reliable performance in demanding pharmaceutical environments.

- Double cantilever design reduces sensitivity to side loads, vibration, and thermal expansion
- Demonstrated significantly lower error under eccentric loading vs. shear beam designs (~10× in test conditions)
- Floating load point improves measurement stability and repeatability
- High long-term stability with minimal drift
- Wide capacity range (500 kg–50 t / 0.11–112 klb) supports diverse vessel and process requirements
- Available with FM and ATEX certification for hazardous environments



## QuickCal calibration method

QuickCal is an advanced calibration method designed to reduce downtime and streamline calibration procedures in pharmaceutical production environments. It reduces operational disruption and calibration complexity, while maintaining high accuracy and full traceability.

- Full system calibration completed in a fraction of the time vs. traditional methods
- High calibration accuracy ( $\pm 0.1\%$ ) with traceability via BLH Nobel's accredited measurement site
- Eliminates the need for heavy test weights, purified water, or calibrated flow meters
- Requires minimal or no modification to existing tanks, silos, or process vessels
- Can be performed with or without product in the vessel
- Choice of two versions: Up-Lift – ideal for higher fill levels; Pull-Down – ideal for lower fill levels

# PROCESS INSTRUMENTATION

BLH Nobel process instrumentation provides measurement, control, and communication capabilities for integrating weighing systems into pharmaceutical production environments.

## Key features

- Extensive communication support – including multiple interfaces (Ethernet, RS485, USB), protocols and fieldbuses (Modbus RTU, Modbus TCP, ControlNet, PROFINET, PROFIBUS, Ethernet/IP, DeviceNet), and analog output
- Seamless integration into PLC/DCS systems for real-time monitoring and control
- Embedded web server for setup, diagnostics, and system access
- Modular design with panel- or rail-mounted options
- Customizable inputs, outputs, and application-specific software

## G5 Instrument

- High-speed measurement for process weighing and dynamic applications
- Flexible configuration with application-specific software and hardware modules
- Easy parameter backup and restore via USB, SD card, or internal memory



## G6 Instrument

- Multi-channel process instrument for advanced measurement and control, with remote live-view monitoring and diagnostics
- High reading rate and synchronized sampling for accurate measurement under dynamic conditions
- Advanced digital filtering for stable, reliable signals
- Dedicated pharmaceutical software application can be adapted to support audit trail requirements



## Case study

# ENABLING RELIABLE, SCALABLE WEIGHING FOR A MAJOR U.S. LIFE SCIENCE FACILITY EXPANSION



## Background

A global life science manufacturer is expanding its U.S. production capacity with a new facility designed to support growing demand for its pharmaceutical products. The site requires a high-performance weighing and process measurement system to support large-scale, complex operations from day one.

## Need

The new facility requires a state-of-the-art weighing and process measurement system capable of delivering high precision, reliability, and scalability. With over 100 measurement points requiring integration, the customer needed a solution that could handle complex environments, maintain accuracy over time, meet stringent compliance standards, and integrate seamlessly with their existing plant systems.

Minimizing downtime, reducing calibration effort, and ensuring long-term measurement stability were key priorities for the project.

## Solution

The customer chose BLH Nobel's solution for the high-performance capabilities of its weighing technology and its track record in pharmaceutical manufacturing. BLH Nobel is working closely with the customer on installation planning, system integration, and staff training to ensure a smooth deployment.

The selected BLH Nobel solution combines over 100 KIS weigh modules with more than 25 multi-channel process instruments.



KIS weigh modules form the foundation of the system, delivering stable, high-accuracy measurement across all process vessels. Their double-cantilever design ensures reliable performance under vibration, thermal expansion, and shifting loads.

G4 multi-channel instruments enable centralized data acquisition and integration, connecting all measurement points into the plant control system and allowing real-time monitoring and control.

## Results

Once operational in 2027, the facility is expected to benefit from a fully integrated weighing system across more than 100 measurement points, supporting consistent, controlled production at scale.

The integrated system will enable:

- Centralized monitoring and control across all measurement points through integration into the plant control system
- Consistent, stable measurement across vessels and processes under real operating conditions
- Reduced calibration effort through long-term measurement stability
- Simplified system architecture supporting efficient operation across the facility
- Scalable infrastructure to support future expansion

# About

BLH Nobel, part of Vishay Precision Group (VPG), is the pioneer and market leader in heavy-duty process weighing and force measurement solutions for demanding industrial applications. We design, manufacture, and support high-quality, high-performance, extremely accurate, and robust weighing and control systems. Our wide range of standard products and custom solutions is meticulously engineered to optimize our customers' processes and integrate seamlessly with existing equipment. Installed in more than 100 countries, BLH Nobel systems reliably provide precise stress, force, weight, pressure, and current measurements in the toughest environments. Our strain gauge-based load cells meet the most stringent specifications for accuracy and reliability.

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