Weighing Solutions for Process & Packaging

Easiest to Use    |    Highest Performance    |    Lowest Total Cost
With close to 100 years of experience, Hardy understands the challenges manufacturers face. Our customers tell us they must:

- Increase productivity or throughput while reducing costs
- Sustain or improve product quality
- Respond faster to customers' needs
- Comply with an ever increasing set of regulations

Hardy has developed a variety of industrial weighing solutions that either meet or exceed each of the above challenges, driving Overall Equipment Effectiveness (OEE) up, no matter where those solutions are located in the manufacturing process. At the same time, we help our customers take on their challenges at the LEAST TOTAL COST. Our solutions deliver reductions in waste, while enhancing quality, safety and productivity. They do this by increasing yield and reducing downtime by as much as 51%, compared to other industrial weighing solutions.

Hardy products meet industry standards and are EASY to integrate. At the same time, they consistently, cost-effectively, and safely help produce high-quality products. Hardy has weighing solutions to assist you in complying with regulations, while increasing consumer satisfaction.

Hardy lowers the total cost to OWN, DESIGN and INTEGRATE almost any weighing application. Here’s how!

**Own & Operate**

Less WASTE, less RISK, more PRODUCTIVITY

- Simplify use and training with easy to use operator/maintenance interfaces.
- Increase measurement stability/resolution to reduce cycle times and increase throughput.
- Replace expensive, risky, time consuming traditional calibrations with fast, easy, safe, accurate electronic calibrations.
- Decrease scale downtime with operator and internet enabled tools to trouble shoot and diagnose your scales.

**Design, Develop & Deliver**

Less TIME to engineer, EASIER to implement, VERY scalable

- Choose from a variety of instruments, PLC plug-in modules and sensors, scalable to the economy of your machines.
- Use an open-architecture that delivers complete freedom of design and optimizable footprint.
- Deploy weight processors or weight controllers with in-built material feeds by weight, rate, or check weighing.
- Take advantage of validated integration tools, easy configuration and FREE phone support from experts in process weighing.

**Integrate**

Less TIME to integrate & configure. EASIER to connect. VERY scalable.

- Choose from a range of scalable, intelligent Allen-Bradley modules and load cells that plug into the PLC backplane.
- Select from a wide range of field instruments, load cells and wired fieldbus communications.
- Use Rockwell validated integration tools- AOPs (Add-On-Profiles), EDS_AOPs or AOIs to make setup and configuration easy.
- Deploy our Faceplates, reuse and repurpose your PLC code.
In almost every industry, raw materials and finished product need to be weighed multiple times in the manufacturing process. Hardy has the expertise and innovative solutions to assist your team in reducing cost and increasing yield, while limiting downtime and achieving Overall Equipment Effectiveness (OEE). Hardy excels in weighing solutions for processing and packaging.
Supporting Your Business In Every Stage of the Process

Stock
Inventory Management Solutions
In stage one of the manufacturing process, you must have reliable visibility to, and an accurate count of, all raw materials in your manufacturing supply chain. This is the first step to ensure your process runs smoothly. Hardy’s inventory weighing solutions deliver both at the least total cost to own, safely operate and maintain.

Applications
• Vessel / Tank Weighing
• IBC Weighing
• Inventory Control
• Throughput Weighing

Make
Batching & Blending
The second stage of the manufacturing process involves sequentially or simultaneously adding one or more ingredients into vessels by weight and/or rate, then discharging the batch (sum of all the ingredients) to a downstream process. Hardy’s material feed solutions ensure the accuracy of the mix (batch or blend), delivering highly repeatable results and ensuring good quality control at the least total cost to own, safely operate and maintain.

Applications
• Sequential Batching by Gain in Weight
• Simultaneous Batching by Loss in Weight
• Blending by Loss in Weight
• Loss in Weight Feeder Control

Pack
Filling, Dispensing, Dosing
Packing lines need precise filling solutions (for gross weight applications), and/or dispensing solutions (for net weight applications) to control the very fast feeds needed to sustain the throughputs required as finished product is packed into containers. Weighing provides the best accuracy for this task, and the most repeatable result. Hardy’s filling solutions (gain-in-weight) and dispensing solutions (loss-in-weight) deliver the best material feed results, at the least total cost to own, safely operate and maintain.

Applications
• Packing by Gain/Loss in Weight
• IBC Dispensing
• Piece/Portion Weighing
• Floor Scale

Ship
Product Inspection
The last step in the manufacturing process calls for filled containers to be reweighed to check proper filling, meet regulatory requirements, and ensure customer satisfaction. Hardy’s checkweighing solutions static (manual or semi-automated weighments) or dynamic (automated in-motion weighments) can be used for a wide variety of applications including verifying package, weight, piece count, grading or sorting. Once again delivering fast product inspection solutions, at the least total cost to own, safely operate and maintain.

Applications
• Static Checkweighing
• Dynamic Checkweighing
• Bench Scale
• Portable Scale
Tools to Increase Productivity

The Hardy Process Toolbox is a unique set of productivity tools that support industrial weighing functions. Each tool saves time, increases accuracy, improves efficiency or reduces risk in process weighing applications, while saving OEMs considerable development and systems integration time. Another key benefit is the ability to differentiate your product offering.

C2® - Calibrate Without Weights
The Hardy C2® Process Toolbox function provides quick and easy electronic calibration of a weighing system without the need for heavy test weights.

WAVERSAVER® - Stabilize Noisy Weight Readings
Hardy’s WAVERSAVER core technology eliminates the effects that surrounding vibration has on the scale weight signal, providing only true data for fast, accurate weight reading.

WAVERSAVER+ - Increase Scale Resolution
Filters both external and internal noise under a static weight condition to go beyond the 1 in 10,000 limitation, providing repeatable weighing results the first time and every time.

INTEGRATED TECHNICIAN® - Diagnostic Tools for Operators
Hardy’s INTEGRATED TECHNICIAN (IT) core feature helps you troubleshoot your weighing system and diagnose problems from the front of the instrument or via the PLC.

Embedded Web Server - Connect from Anywhere
Access your instrument from any computer browser. Use the embedded web server to set up all parameters from anywhere on the Ethernet network.

Secure Memory Module - Safe Configuration Backups
Hardy’s Secure Memory Module (SMM) uses a standard SD card or USB stick to automatically back up critical weighing system data, and allowing you to transfer it to another like controller in a few minutes. You can also use the card to easily back up your controller data onto a PC.

FEED-MASTER - Mitigate Feed Disturbances
Hardy’s proprietary FEED-MASTER predictive/adaptive algorithm adapts for the flow variation in real time during every feed.

CHECK-MASTER - Weigh Stationary or In-Motion Items or Finished Product
Hardy’s CHECK MASTER is a set of software tools that support check weighing functions and are part of every Hardy Check Weighing solution. A fully automated Check Weighing system is designed to weigh static items or automatically weigh in-motion items. The check weight controller then directs downstream diverter gates to route product based on weight.

Accurate
Stable
Fast
Flexible
Easy
INTEGRATED SOLUTIONS

Hardy Dynamic Checkweigher Family
- Open Source
- Off-the-shelf
- Seamless Integration
- Easy to maintain and upgrade
- Uses Rockwell Automation Studio 5000 software and Allen-Bradley hardware
- Includes complete diagnostics and statistical analysis packages
- Seamlessly integrates equipment, data, control and analytics
- Includes Waversaver, Waversaver+, C2, IT, EDS-AOP (Add-on Profile).

Integrated Panel Solutions
- Type 4 and 4X Enclosures
- Stainless or Powder-coated Steel
- Rectangular, watershed, and hygienic designs
- Easy to order and saves time in configuration and installation
- Pre-cut gland holes and wireways for easy clean installation
- Delivered pre-wired and ready to install
- Includes Waversaver, Waversaver+, C2, IT, AOP, Faceplates/AOI (Depends on Configuration)

Swivel Mount Enclosure
- Made in the USA using 16-gauge Stainless Steel
- Rated for IP66/NEMA 4 environmental conditions
- Delivered containing either a Hardy HI 6500 or 6300 series Weight Processor
- Large, high-contrast LCD display
- LCD protected from impact by a polycarbonate window behind a water-tight membrane
- Couple with a bench or floor scale for a complete weighing system
- Includes Waversaver, C2, IT, EDS-AOP, Faceplates/AOI (Depends on Configuration)

HI 6000 Series Panel Mount Wall System (PMWS)
- Designed for use in hazardous Class I, II, III/DIV 2 applications
- Factory assembled in a stainless steel (NEMA 4X) enclosure with an IP66 rated display panel
- Built in summing card to eliminate the need for a separate junction box. Just hang it on the wall, connect your load cells and you are ready to calibrate
- Includes C2, IT, Waversaver, SMM, EDS_AOP (HI 6500 only)

WEIGH SCALE PLC MODULES

Weigh Modules for CompactLogix™ or MicroLogix™ 1500
- HI 1769-WS single-scale and the HI 1769-2WS dual-scale weigh modules
- Reads weight and diagnostic data from strain gage load cells and communicate this data over the I/O chassis backplane to either the MicroLogix 1500 or the CompactLogix (with 1769 Compact I/O™) processor
- Includes Waversaver, C2, AOP, Faceplates/AOIs

Weigh Modules for ControlLogix®
- HI 1756-WS single-scale and the HI 1756-2WS dual-scale weigh modules
- Reads net, gross, tare and rate-of-change weight, and diagnostic data from strain gage load cells
- Communicates the results over the I/O chassis backplane to the ControlLogix processor
- Includes Waversaver, IT, C2, THE BUTTON, AOP

Weigh Scale Modules for POINT I/O®
- Ultra-compact at just a ½” wide
- The HI 1734-WS module saves cabinet space over the use of dedicated instrumentation, reducing both machine cost and control cabinet footprint
- Fast to install and commission by snapping modules into terminal blocks onto a POINT I/O Network Adaptor. Then use an AOP file to set-up and configure in RSLogix or Studio5000
- Allows connectivity to EtherNet/IP, DeviceNet, and ControlNet in linear, star and ring topologies
- Includes Waversaver, C2, IT, AOP, Faceplates/AOI

Weigh Module for SLC™ 500
- HI 1746-WS single-scale weight module reads net, gross, tare, and rate-of-change weight, and diagnostic data from strain gage load cells
- Communicates the results over the I/O chassis backplane to the Allen-Bradley® SLC 500 processor
- Includes C2, IT, Waversaver, THE BUTTON

6  Easiest to Use    |    Highest Performance    |    Lowest Total Cost
WEIGHT CONTROLLERS

HI 4050+ Weight Controller
- HI 4050+ is easily configured to meet specific applications
- Selectable update rate of 100 or 250 updates psec.
- Resolution of 1:30,000
- Mounting includes in-panel, remote, blind, DIN rail or wall mount
- Comes standard with Serial and Ethernet; optional Analog, EtherNet/IP, DeviceNet, ControlNet, Modbus TCP or Profinet
- Includes an SMM card for transfer of configuration data; optional rate-of-change and digital I/O capability
- Includes C2, IT, SMM, Embedded Web Server

HI 3030 Multi-Scale Controller
- HI 3030 controls up to four scales at one time
- Acts as a bridge to a PLC since one port works with all channels over optional DeviceNet, Analog, ControlNet, EtherNet/IP, Modbus TCP or Profinet
- Features standard Ethernet interface with an embedded web server
- Twelve set points with independent dead bands and pre-acts are assignable to four or seven optional on-board relays or external third party I/O
- Includes C2, IT, SMM, Embedded Web Server, Waversaver

HI 2151/30WC Weight Controller
- Stand-alone unit
- The HI 2151/30WC multi-purpose weight controller can control as many as eight relays, based on either gross, net, rate-of-change, peak hold, or totalized weight values
- Can also act as a front end for a control system, transmitting weight values to PLCs or PCs
- Available in panel, wall or remote mount configurations
- Includes C2, IT, SMM, Waversaver

HI 200DNWM DeviceNet Weigh Module
- The ODVA conformance-tested HI 200DNWM weigh module supports a single scale with up to eight ADVANTAGE® load sensors or four 350 Ohm load cells
- Communicate net, gross, tare, or set point data over the DeviceNet open network interface to a PC, PLC, or DCS
- Features two TTL level set points for control. A “Command Interface” capability allows access to all parameters without using explicit messages
- Includes C2, THE BUTTON, Waversaver

APPLICATION-SPECIFIC MODULES

Weigh Module for Micro800™
- The EASY 8™ single-scale weigh module reads net, gross, tare, and rate-of-change weight, and diagnostic data from strain gage load cells
- Communicates results over the I/O chassis back-plane to the Allen-Bradley® Micro800 processor
- Includes 3-step Waversaver

Loss-In-Weight Modules for ControlLogix®
- HI 1756-FC weigh feeder control module is used in new applications or to retrofit volumetric feeders
- Mounts directly into your ControlLogix chassis and controls many standard feeding devices as well as your proprietary designs
- HI 1769-FC feeder control module will watch your process and notify you of problems
- Includes C2, IT, Add-On-Profile (AOP), Waversaver

Loss-In-Weight Modules for CompactLogix™ or MicroLogix™ 1500
- HI 1769-FC weigh feeder control module is used in new applications or to retrofit volumetric feeders
- Mounts directly into your CompactLogix (with 1769 Compact I/O™) or MicroLogix chassis and controls many standard feeding devices, as well as your proprietary designs
- Includes C2, IT, AOP, Waversaver

Dispenser/Filler Modules for ControlLogix®
- HI 1756-nDF Dispenser/Filler modules can be used in a variety of material-flow applications where speed, repeatability and accuracy are paramount to the process
- Mounts directly into your ControlLogix chassis and automates the entire process by monitoring, controlling, tuning and maintaining the dispense/fill operation
- Available in single or dual configurations
- Includes C2, IT, AOP, THE BUTTON
APPLICATION-SPECIFIC CONTROLLERS

HI 4060 Rate Controller
• Single-feeder, closed-loop rate controller is used with auger, belt and vibratory-based feeders to enable gravimetric control
• Controls and adjusts feeder speed based on loss-in-weight rate parameter settings
• Features true five-point automatic rate calibration, automatic feeder refill, various alarms, control relays, EtherNet TCP/IP, printer port, 4 analog outs, and remote setpoint inputs
• Optional DeviceNet, Remote I/O, Profibus, Modbus TCP/IP, and Analog communications
• Includes C2, IT, Waversaver, SMM, Embedded Web Server

HI 3010 Filler/Dispenser
• HI 3010 can act as a standalone controller, or as a distributed control device for your PC or PLC, to monitor and control a variety of filling, dispensing, or intermediate bulk container (IBC) applications
• Powers the scale, controls the speed, evaluates the weight, automatically refills and discharges the desired amount of product and notifies you of system conditions through its extensive networking capabilities
• Includes C2, SMM, Embedded Web Server, Waversaver

HI 4050-CW Check Weighing Bundle
• The high-speed HI 4050CW check weighing system can process up to 250 high resolution (1:30:000) weight measurements psec
• The 4050CW consists of a special version of the HI 4050+ weight controller connected to either 3-4 analog load cells and a junction box or to a single load cell or scale
• Supports both static or dynamic checkweighing
• Compatible with external sensors such as photo eyes
• Includes C2, IT, Waversaver, Waversaver+, SMM, Embedded Web Server, EDS_AOP

LOAD POINTS / LOAD CELLS / LOAD SENSORS

ADVANTAGE® HI LPRC03
• For high capacity vessels, hopper dispensing, and batch weighing applications
• Comes in 16.5 Klb, 33Klb, 50Klb, 66Klb, 88Klb, 110Klb, 220Klb, 330Klb and 660Klb
• Rocker-type load sensor; Mounts come in stainless, plated or painted steel
• No dummy load cells are required
• NTEP Class III

OneMount™
• Built to save customers time and money during installation, calibration, and maintenance. Each load point provides extraordinary flexibility and durability in industrial environments
• Designed for checkweighing, vessel, hopper and tank weighing
• No dummy load cells are required
• 360° checking mechanism permits installation in any direction
• Self-checking mechanism withstands considerable shear forces and provides lift-off protection
• Precision beam sensor from 22 to 550 lbs and Shear Beam sensor from 1.125Klb to 22.5Klb

ADVANTAGE® HI HLPT
• Designed for tension applications, such as small hopper, tank weighing hybrid systems with levers, and belt weighers
• Available in 225lb, 450lb, 1.125 Klb, 2.25Klb, 4.5Klb and 11.25Klb capacities
• Mounts available in stainless or plated steel for capacities to 4.5 Klb, and plated steel in higher capacities

ADVANTAGE® HI HLPS & HI LPB
• LPB Designed for light to medium capacity available in 44lb, 110lb, 225lb, and 450lb capacities
• HLPS: For medium to high capacity comes in 1.125Klb, 2.25Klb, 4.5Klb, 11.25Klb, and 22.5Klb capacities
• Mounting hardware available in either stainless or zinc plated steel
• HLPS Only: NTEP Class III

Easiest to Use | Highest Performance | Lowest Total Cost
WEIGHT PROCESSORS

HI 6600 Series Modular Sensor System
- HI 6600 series is a modular system of weight processors that deliver up to 28 channels of fast, stable, high-resolution weight readings to PLCs, PACs and DSCs over a single fieldbus network.
- Protocols supported include EtherNet/IP, EtherCAT, Modbus RTU, Modbus TCP or Profinet-DP.
- Rockwell EDS_AOP simplifies integration using RSLogix or Studio 5000.
- Includes C2, IT, Waversaver, SMM, EDS_AOP.

HI 6500 Series
- HI 6500 series of EtherNet/IP enabled weight processors feature a Rockwell EDS_AOP and Faceplate/AOIs compatible with RSLogix.
- Also available: Profibus-DP, Modbus, and Ethernet TCP/IP protocols. The HI 6500XP Extreme Processor is 6X the speed and 3X the resolution.
- Features a big, bright multichannel display.
- Delivers fast, high-resolution weight readings.
- Weight processors are used as front ends to control systems or operate standalone for all types of applications.
- Includes C2, IT, Waversaver, SMM, EDS_AOP, Faceplate/AOIs.

HI 6300 Series
- HI 6300 Series includes the HI 6300 and the HI 6310.
- Both instruments are engineered to provide accurate, stable and repeatable weight, while striking the optimum balance between price and application flexibility.
- HI 6300 series can be used as a standalone weight processor or as the front-end to a weight-based control system.
- These instruments read, condition, and digitize load cell and strain gauge signals commonly found in process weighing or packaging applications.
- Includes C2, IT, Waversaver, SMM (HI 6310 only).

HI SPA Series
- Designed for OEMs and Bench scales, these load cells are all Stainless Steel, direct bolting, with C2® calibration.
- Available in capacities ranging from 7.5Kg to 200Kg.
- HI SPA22 is polished 17-4PH stainless steel with complete hermetic sealing.
- HI SPA42 is a polished stainless steel brick type with complete hermetic sealing.
- HI SPA60: IP67 rated, 66 to 1.65Klb.
- HI SPA104 and HI SPL: 300 g to 3 Kg.

ADVANTAGE® Lite Family
- Featuring C2® and IP67 ratings, these compression type, load points offer performance and exceptional value.
- HI MSBRE mount works with HI SB05 or ADVANTAGE HI SBH04 sensors. Available in 1.125Klb, 2.25Klb, 4.5Klb, 11.25Klb, and 22.5Klb capacities.
- HI LPRE features lift-off protection stray voltage isolation, & minor misalignment correction.
- Available in 440lb, 1.1Klb, 2.2Klb and 4.4Klb capacities.

Footed Load Cells
- Perfect combination of advanced features and economy for OEMs and System Integrators.
- Industry Standard Load Cell Form factors allow for easy upgrade of existing systems to utilize C2® Calibration.
- IP68 or IP68/IP69K protection.
- Height Adjustable Rubber Feet.
- 2.25k / 4.5k / 11.25k / 22.5k Klbs.
- Stainless Steel, Electropolished Stainless Steel or Alloy Steel.

ADVANTAGE® Single-Point
- Designed for OEMs and Bench scales, these load cells are all Stainless Steel, direct bolting, with C2® calibration.
- Available in capacities ranging from 7.5Kg to 200Kg.
- HI SPA22 is polished 17-4PH stainless steel with complete hermetic sealing.
- HI SPA42 is a polished stainless steel brick type with complete hermetic sealing.
- HI SPA60: IP67 rated, 66 to 1.65Klb.
- HI SPA104 and HI SPL: 300 g to 3 Kg.

ALUMINUM SINGLE-POINT
- Hardy also offers a family of aluminum single point load cells.
- HI SPA22: IP67 rated, 11 to 88lb.
- HI SPA42: IP67 rated, 11 to 440lb.
- HI SPA60: IP67 rated, 66 to 1.65Klb.
- HI SPA104 and HI SPL: 300 g to 3 Kg.

Available for compression or tension applications, and in capacities ranging from 44 lb to 660,000 lbs, Hardy Process Solutions' ADVANTAGE load points and sensors are designed with a keen attention to detail that translates into optimum performance. Stainless steel ADVANTAGE load sensors feature a NPT conduit adapter, true hermetic sealing to IP68 for superior protection from moisture, embedded electronic load cell data sheets, and matched parameters for easy installation without corner adjusting. Inside the load cells, a Hardy C2® memory chip allows electronic calibration in seconds without test weights. ADVANTAGE® mounting hardware is designed to direct the load properly to the sensor, while resisting angular effects and reducing moment sensitivity, still permitting thermal expansion and contraction on the weighing system. Each load point is fitted with a grounding strap and anti-lift-off protection. All ADVANTAGE load points feature IP68 ratings.
C2® Certified Cable
- Certified load point cable is designed and tested to easily handle the low voltages found in weighing systems, as well as the load point’s performance characteristics and switching commands
- Eight conductors, each a 22 AWG stranded copper wire for flexibility, carry the signals to and from the weighing instrument and the junction box

Junction Boxes
- Contains a Summing Card in a NEMA 4 or 4X enclosure that distributes the excitation voltage for up to four load points, and transfers their performance characteristics and weight signals to the weighing instrument
- Boxes are available in fiberglass, stainless, or painted steel
- Optional INTEGRATED TECHNICIAN circuitry provides easy isolation and trouble-shooting of each component of your weighing system when used with a Hardy instrument
- Summing Cards are also available separately
- HI 6020JB-SSX-Y & HI 6020IT-SSX-Y models: Class I, II, III, Division 1, Class I, Zone 0 and Zone 20
- HI 6020JB-SSX-Y-EX & HI 6020IT-SSX-Y-EX: ATEX: Cert No. DEMKO 17 ATEX 1819 and IECEx: Cert. No. IECEx UL 17.0009

ACCESSORIES
Connectivity Solutions

Hardy offers the widest choice of network interfaces in the process industry to communicate over:

- **ETHERNET/IP**
- **MODBUS TCP**
- **CONTROLNET**
- **DEVICENET**
- **PROFIBUS**
- **MODBUS RTU**
- **REMOTE I/O**
- **ANALOG**
- **ETHERNET TCP/IP**

**Notes:**
- HI 6000 Series Weight Processors refers to both the HI 6300 and HI 6500 Series

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Proven Solutions

For nearly 100 years Hardy Process Solutions, headquartered in San Diego, California, has been providing innovative process control solutions for manufacturers. With that, we have saved our customers thousands of production hours and millions of dollars. Our goal is to provide superior weighing equipment as an industrial scale company that stays on the pulse of innovations in the field. At Hardy, we pride ourselves on the ability to continuously provide superior product quality and excellent customer support, which enables our customers to achieve their process goals.

Hardy delivers high performance weighing solutions with the LOWEST TOTAL COST to own. We include Industry Leading Technology in all of our scales and instruments to make it EASY for you to install, integrate, and maintain. Powerful solutions that are easy to use is why our customers realize increased production efficiency.

In 2007 Hardy was acquired by Roper Technologies, Inc. Roper is a diversified technology company providing engineered products and solutions for global niche markets, including software information networks, medical, water, energy, and transportation. Roper is a component of the S&P 500, Fortune 1000 and Russell 1000 Indexes and trades on the New York Stock Exchange under the symbol ROP.

Instant Information

We offer instant access to videos, white papers, articles, case studies, brochures, application notes, and more.

Simply go to:
www.hardysolutions.com/media-center/view

FREE Online and Phone Support
1-800-821-5831
www.hardysolutions.com
Unrestricted Access to Manuals and Drawings Online
Free Dial-In Technical Support and Applications Support
Onsite Certified Technicians for Hire
Nationwide field services include:
installation/start-up, periodic service, system verifications and calibrations.
24-hour, 7-day emergency service & repair.

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