

## **YOUR PARTNER IN PROCESS MEASUREMENT**



# YOUR PARTNER IN PROCESS MEASUREMENT

In almost all industries, manufacturing operations require materials to be weighed at some point of the production process. Hardy Process Solutions will help you improve process efficiencies and achieve operational excellence in the four major areas of the supply chain.



**Improve your inventory management accuracy**  
**SILO & TANK MEASUREMENT SOLUTIONS**



**Optimize your batching/blending accuracy and throughput**  
**FEED AND RATE CONTROL SOLUTIONS**



**Tighten the tolerances on your packaging lines**  
**FILL & DOSING CONTROL SOLUTIONS**



**Enhance your product inspection capability**  
**CHECK WEIGHING SOLUTIONS**

## INDUSTRIES

- Food/beverage
- Chemical/petrochemical
- Life Sciences
- Agriculture
- Feed and grain
- Water/wastewater
- Power
- Mining and metals
- Pulp and paper
- General automation

## APPLICATIONS

- Filling/dispensing
- Batching/blending
- Checkweighing
- Bulk bag/IBC
- Draft control
- Loss-in-weight rate control
- Loss-in-rate weight control
- Level control
- Tank farm monitoring
- Force measurement

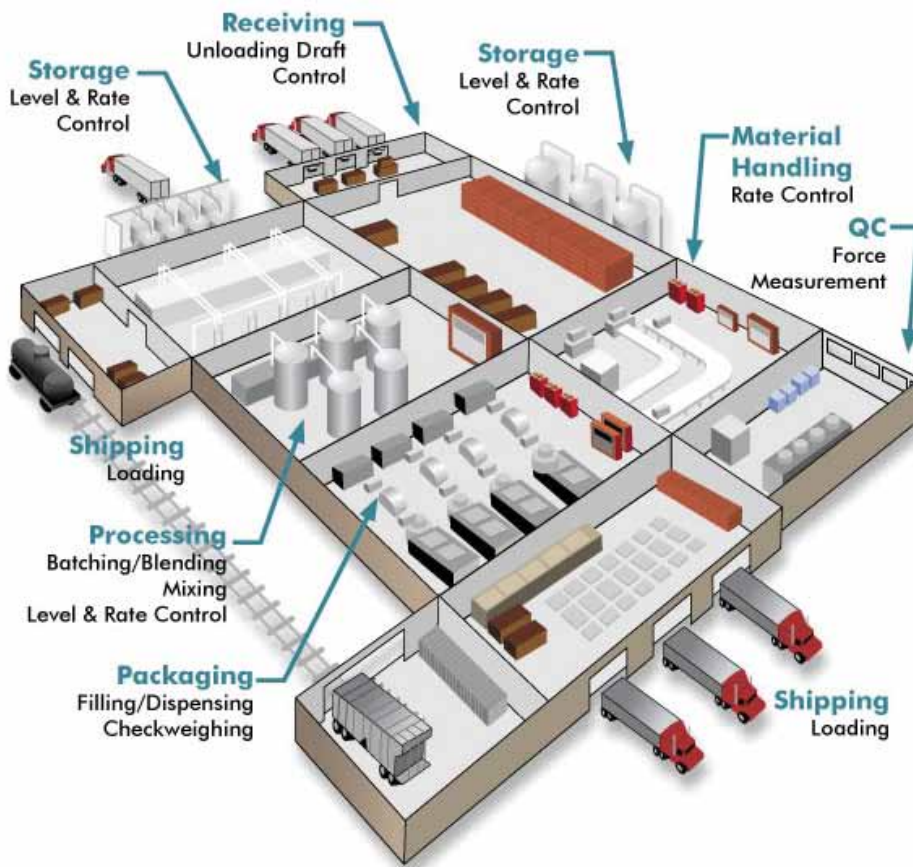
## NETWORKS

- DeviceNet
- ControlNet
- EtherNet
- EtherNet/IP
- Remote I/O
- Profibus
- Modbus RTU
- Modbus TCP
- Analog
- Serial

Hardy is a proud Encompass™ Global Partner with Rockwell Automation® and Collaborative Automation Partner™ with Schneider Electric.



# HARDY PROCESS SOLUTIONS



Hardy helps manufacturers and processors by providing process measurement solutions that reduce waste, increase productivity and improve quality, often by up to 50% over prior systems. Our customers find Hardy's people and solutions easy to work with and reliable, while delivering an exceptional return on investment.

Hardy Process Solutions has established itself as an industry leader in the weighing automation world by providing precision measurements and high accuracy, while seamlessly integrating process weight signals into the plant control system. An ISO 9001:2008 certified company, we pride ourselves on our ability to provide superior product quality and excellent customer support.

## THE HARDY DIFFERENCE

### WHY HARDY?

- Hardy's products and people are easy to work with, providing you top-notch customer service and high quality products and solutions.
- Our key customers are Manufacturers, Food Processors, System Integrators and OEMs, making us experts focused on understanding your process weighing needs.
- Our process weighing solutions measure, dispense and feed raw materials, and check finished product providing you complete end-to-end solutions.
- Our solutions reduce raw material waste, increase production capacity, improve quality, and help lower inventory levels; offering you outstanding value.
- Our customers are able to increase their productivity and accelerate their return on investment, giving them a competitive edge.





# HARDY CORE TECHNOLOGIES

## WAVERSAVER®

### WAVERSAVER® Ignore vibration around scales

Machinery surrounding scales, such as motors, mixers, blenders, conveyors, and even forklifts, can introduce a unique vibratory force to the scale, causing fluctuating weight displays and inaccurate batch weights. WAVERSAVER® enables you to weigh line conveyors, augers, and even mixers while running, and can be adjusted to ignore signals above 0.25Hz with virtually instantaneous response. No complex poles or corner filters need be tuned.

WAVERSAVER's exclusive technology:

- Ignores unwanted plant vibration on and around scales
- Enables fast and accurate weight readings
- Allows other process activity while you weigh
- Improves batch quality and speed
- Eliminates wasted product
- Eliminates the need to reset the instrument if vibration levels change periodically

## C2® CALIBRATION



### Calibrate your weighing system electronically in seconds

As soon as your weighing system is installed, C2® lets you calibrate it and verify proper scale operation with a small test weight. Calibration with test weights can mask actual scale performance problems, such as binding. C2 unmask these hidden performance barriers before you get into production.

Each Hardy individual load sensor has NIST (National Institute of Standards and Technology) traceable performance characteristics stored on an internal memory device. Your C2 system reads these parameters and electronically calibrates the scale for you. A single reference point is entered to calibrate the scale system. The result is a calibration that is easier, quicker, safer, and more accurate than traditional calibration methods.

## INTEGRATED TECHNICIAN®



### Troubleshoot and diagnose problems in minutes

INTEGRATED TECHNICIAN (IT®) lowers your weighing system maintenance costs by letting you quickly troubleshoot and diagnose many weighing system problems. Use IT through the instrument to run maintenance tests showing system weights, voltages, system stability, and return to zero test, to help isolate the problem to the instrument, cabling, junction box, or individual sensors.

## SECURE MEMORY MODULE



### Back up your configuration data automatically

Located on the instrument's rear panel for easy access, the Secure Memory Module (SMM) stores critical configuration, calibration, and set-up data, protecting this information from corruption. During system operation, when a new parameter is entered, the SMM automatically updates that value in its memory. You can transfer the SMM between instruments to share or restore configuration data in minutes. And with the SMM-SD card, this data can also be stored and modified on a PC.

## EMBEDDED WEB SERVER



### Access your instrument from any computer browser

Use the embedded web server to set up all parameters from anywhere on the EtherNet network. This web server also gives you remote access to control information and instrument parameters, further optimizing production efficiency by sharing real-time data on the plant floor with OEM partners or off-site maintenance personnel.

## THE BUTTON



### Calibrate your weighing system at the push of a button

With one push of THE BUTTON, Hardy's weigh scale modules can automatically calibrate your C2® weighing system, making it instantaneously ready for use. With no weight on the scale, simply press on the red button and hold for about three seconds. The system's C2 load point performance parameters will combine within the module, electronically calibrating the scale system.

# HARDY CUSTOMERS



## FOOD & BEVERAGE

- McCain Foods
- George Weston/Bimbo Bakeries
- ConAgra
- Cargill
- Del Monte
- Starbucks
- Heinz
- Iams
- J.M. Smucker
- ADM Cocoa

## CHEMICAL/PETROCHEMICAL

- 3M
- BASF
- Dupont
- Dow Chemical
- Saint Gobain

## PLASTICS

- Albermarle
- Americhem
- Chevron Phillips
- Rogers Corp.
- Teknor Apex

## AGRICULTURE/FEED & GRAIN

- Midwest Grain Products
- ConAgra

## HEALTH & BEAUTY

- Proctor & Gamble
- Colgate Palmolive

## TIRE/RUBBER

- Bridgestone/Firestone
- Goodyear/Dunlop
- Michelin

## PHARMACEUTICAL/ LIFE SCIENCES

- Apotex
- Elan Drug
- Wyeth
- Glaxo Smith Kline
- Genentech

## MINING & METALS

- Phelps Dodge Miami
- Nucor Steel
- AK Steel
- Arcelor Mittal

# HARDY HISTORY



Hardy Process Solutions began in 1918 as Hardy Scales, specializing in weight measurement and control systems. In 1984, we changed our name to Hardy Instruments, and in 2011 to Hardy Process Solutions, as we redefined our business focus. Today we are a leading manufacturer, designer and solution provider for process measurement applications, particularly renowned for our innovative approaches to precision instrumentation. We work with our customers to develop products that will help them save money and time, improve productivity, increase throughput, and make their work environment safer. An ISO 9001:2008 company, we pride ourselves on our ability to provide superior product quality and excellent customer support. We cater to many industries and have developed a vast array of connectivity options in the process industry.

**ISO 9001:2008**  
CERTIFIED

## WEIGH SCALE MODULES



### Weigh Modules for CompactLogix™ or MicroLogix™ 1500

The HI 1769-WS single-scale and the HI 1769-2WS dual-scale weigh modules read 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 processor. *Includes WEVERSAVER, IT, C2, Add-On Profile (AOP).*



### Weigh Modules for ControlLogix®

The HI 1756-WS single-scale and the HI 1756-2WS dual-scale weigh modules read net, gross, tare and rate-of-change weight, and diagnostic data from strain gage load cells, and they communicate the results over the I/O chassis back-plane to the ControlLogix processor. *Includes WEVERSAVER, IT, C2, THE BUTTON, Add-On Profile (AOP).*



### Weigh Module for SLC™ 500

The HI 1746-WS single-scale weigh module reads net, gross, tare, and rate-of-change weight, and diagnostic data from strain gage load cells and communicates the results over the I/O chassis back-plane to the Allen-Bradley® SLC 500 processor. *Includes WEVERSAVER, IT, C2, THE BUTTON.*



### 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 and communicates the results over the I/O chassis back-plane to the Allen-Bradley® Micro800 processor. *Additional Options include WEVERSAVER, C2.*

## APPLICATION-SPECIFIC MODULES



### Loss-In-Weight Modules for ControlLogix®

The HI 1756-FC weigh feeder control module is used in new applications or to retrofit volumetric feeders. It mounts directly into your ControlLogix chassis and controls many standard feeding devices as well as your proprietary designs. *Includes WEVERSAVER, IT, C2, Add-On Profile (AOP).*



### Loss-In-Weight Modules for CompactLogix™ or MicroLogix™ 1500

The HI 1769-FC weigh feeder control module is used in new applications or to retrofit volumetric feeders. It mounts directly into your CompactLogix or MicroLogix chassis and controls many standard feeding devices as well as your proprietary designs. *Includes WEVERSAVER, IT, C2, Add-On Profile (AOP).*



### Dispenser/Filler Modules for ControlLogix®

The 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 overall process. It mounts directly into your ControlLogix chassis and automates the entire process by monitoring, controlling, tuning and maintaining the dispense/fill operation. *Includes WEVERSAVER, IT, C2, THE BUTTON.*

## WEIGHT CONTROLLERS



### HI 4050 Weight Controller

Only three inches deep, the HI 4050 is easily configured to meet specific application needs. It is available with AC or DC power. Mounting includes in panel, remote, blind DIN rail or wall mount. It comes standard with Serial and EtherNet; optional EtherNet/IP, DeviceNet, ControlNet, Modbus TCP, Analog, RIO, DIO and Profibus. It includes a Secure Digital (SD) based Secure Memory Module card for transfer of configuration data; optional rate-of-change and digital I/O capability.  
*Includes WAVERSAVER, IT, C2, SMM-SD, Embedded Web Server.*



### HI 3030 Multi-Scale Controller

The HI 3030 can control up to four scales at one time. It acts as a bridge to a PLC since one port works with all channels over optional DeviceNet, Analog, ControlNet, EtherNet/IP, Modbus TCP, Remote I/O or Profibus network. It features standard EtherNet interface with an embedded web server. Twelve set points with independent dead bands and preacts are assignable to four or seven optional on-board relays or external third party I/O.  
*Includes WAVERSAVER, IT, C2, SMM, Embedded Web Server.*



### HI 2151/30WC Weight Controller

As a stand-alone unit, the HI 2151/30WC multi-purpose weight controller can independently control as many as eight relays, based on either gross, net, rate-of-change, peak hold, or totaled weight values. It can also act as a front end for a control system, transmitting weight values to PLCs or PCs. Optional interfaces include Remote I/O, Profibus, Analog, and BCD. This controller is available in panel, wall or remote mount configurations.  
*Includes WAVERSAVER, IT, C2, SMM.*

## APPLICATION-SPECIFIC CONTROLLERS



### HI 4060 Rate Controller

This single-feeder, closed-loop rate controller is used with auger, belt and vibratory-based feeders to enable gravimetric control. It 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 WAVERSAVER, IT, C2, SMM, Embedded Web Server.*



### HI 3010 Filler/Dispenser

The 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. It 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 WAVERSAVER, IT, C2, SMM, Embedded Web Server.*



### HI 4050-CW Check Weighing Bundle

This high speed CHECK WEIGHING bundle can process up to 250 packs per minute. It consists of a special version of the HI4050 weight controller plus a digital sensor point (load cell with integrated mounting kit) and is a perfect fit for both static or dynamic check weighing. The Hardy Digital Sensor Point is designed for industrial applications requiring a fast, accurate and repeatable response to change in weight conditions.  
*Includes WAVERSAVER, IT, C2, SMM-SD, Embedded Web Server.*



# WEIGHT INDICATORS AND TRANSMITTERS



## HI 2110WI Weight Indicator

The HI 2110WI weight indicator acts as a front end for a control system, transmitting stable gross, net, and tare weight data to a PLC or DCS. This indicator is available in panel mount and remote mount configurations, with a choice of Allen-Bradley® Remote I/O, Profibus, Analog, or BCD interfaces.

*Includes WEVERSAVER, C2, SMM.*



## 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. It can communicate net, gross, tare, or set point data over the DeviceNet open network interface to a PC, PLC, or DCS. It features two TTL level setpoints for control and a "Command Interface" capability allows access to all parameters without using explicit messages.

*Includes WEVERSAVER, C2, THE BUTTON.*



## HI 2200LT Load Cell Level Indicator

The HI 2200LT strain gage level indicators are low-cost two-wire devices for strain gage load cells and pressure transducers. Both the HI 2204LT and the HI 2201LT, which is Factory Mutual approved (Class I, Div 1), come in a choice of mounting packages and are fully warranted for two years.

## ANY-WEIGH® SCALES • C2® CABLE • JUNCTION BOXES



### Bench Scales

ANY-WEIGH® Bench Scales feature a very low profile, rugged construction and stainless steel tops. A universal version comes with a 15-foot cable for standard interfacing to strain gauge-based weighing instruments. Other versions feature built-in electronics with choice of DeviceNet or 4-20mA Analog output communications. Both come pre-calibrated and are essentially plug-and-play. An Analog version is FM approved and certified for Class I, II, III, Div I Group A, B, C, D, E, F and G T4. Scale sizes are 12"x12" and 24"x24", and range from 33 to 1,300 lbs.



### Floor Scales

The ANY-WEIGH® Floor Scales include INTEGRATED TECHNICIAN® diagnostics and C2® electronic calibration. They also feature matched ADVANTAGE® hermetically sealed load sensors, which eliminate the need for cornering and potentiometers. A complete set of accessories, including access ramps, pit frames, lifting eyes, and bumpers, are available. Floor scales are available in stainless or painted steel, in sizes from 30"x30" to 6'x8', with capacities ranging from 1,000 to 10,000 lbs.



### C2® Certified Cable

Hardy's C2® 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.

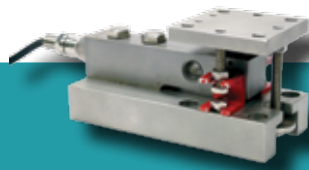
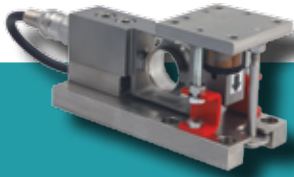


### Junction Boxes

Hardy's junction boxes contain circuitry in a NEMA 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 and are also available in OEM cards. INTEGRATED TECHNICIAN circuitry provides easy isolation and troubleshooting of each component of your weighing system when used with a Hardy controller.



# LOAD POINTS / LOAD SENSORS



## ADVANTAGE® HI LPB

- Designed for use on light to medium capacity vessels
- Available in 44 lb, 110 lb, 225 lb, and 450 lb capacities
- Mounting hardware available in either stainless or zinc plated steel

## ADVANTAGE® HI HLPS

- Designed for use on medium to high capacity vessels
- Available in 1125 lb, 2.25K lb, 4.5K lb, 11.25K lb, and 22.5K lb capacities
- Mounting hardware available in either stainless or zinc plated steel

## ADVANTAGE® HI LPRA

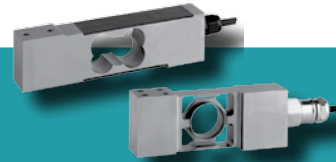
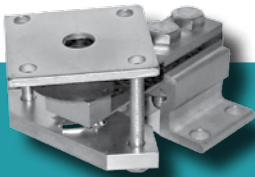
- Designed for use on high capacity vessels
- Available in 33K lb and 50K lb capacities
- Rocker-type load sensor
- Mounting hardware available in either stainless or zinc plated steel

## ADVANTAGE® HI LPRC03

- Designed for use on high capacity vessels
- 66K lb, 88K lb, 110K lb, 220K lb, 330K lb and 660K lb capacities
- Rocker-type load sensor
- Mounting hardware available in stainless, plated steel or painted steel

Available for compression or tension applications, and in capacities ranging from 44 lbs to 660,000 lbs, Hardy Process Solutions' ADVANTAGE® load points and sensors are designed with a keen attention to details that translates into optimum performance for process weighing applications. Stainless steel ADVANTAGE load sensors feature a NPT conduit adapter, true hermetic sealing to IP68 for superior protection from moisture, on-board electronic certs, 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 rating and are NTEP Class III.



## ADVANTAGE® Lite

Featuring C2® electronic calibration and IP67 rating, these medium capacity, compression type, stainless steel load sensors offer superior performance and exceptional value. Featuring lift-off protection, they are self-checking, eliminating the need for external rods to hold the assembly in place. Their rubber element mount provides stray voltage isolation, minor misalignment correction, thermal expansion and shock absorption. Available in 440 lb, 1100 lb, 2200 lb and 4400 lb capacities.

## ADVANTAGE® HI HLPT

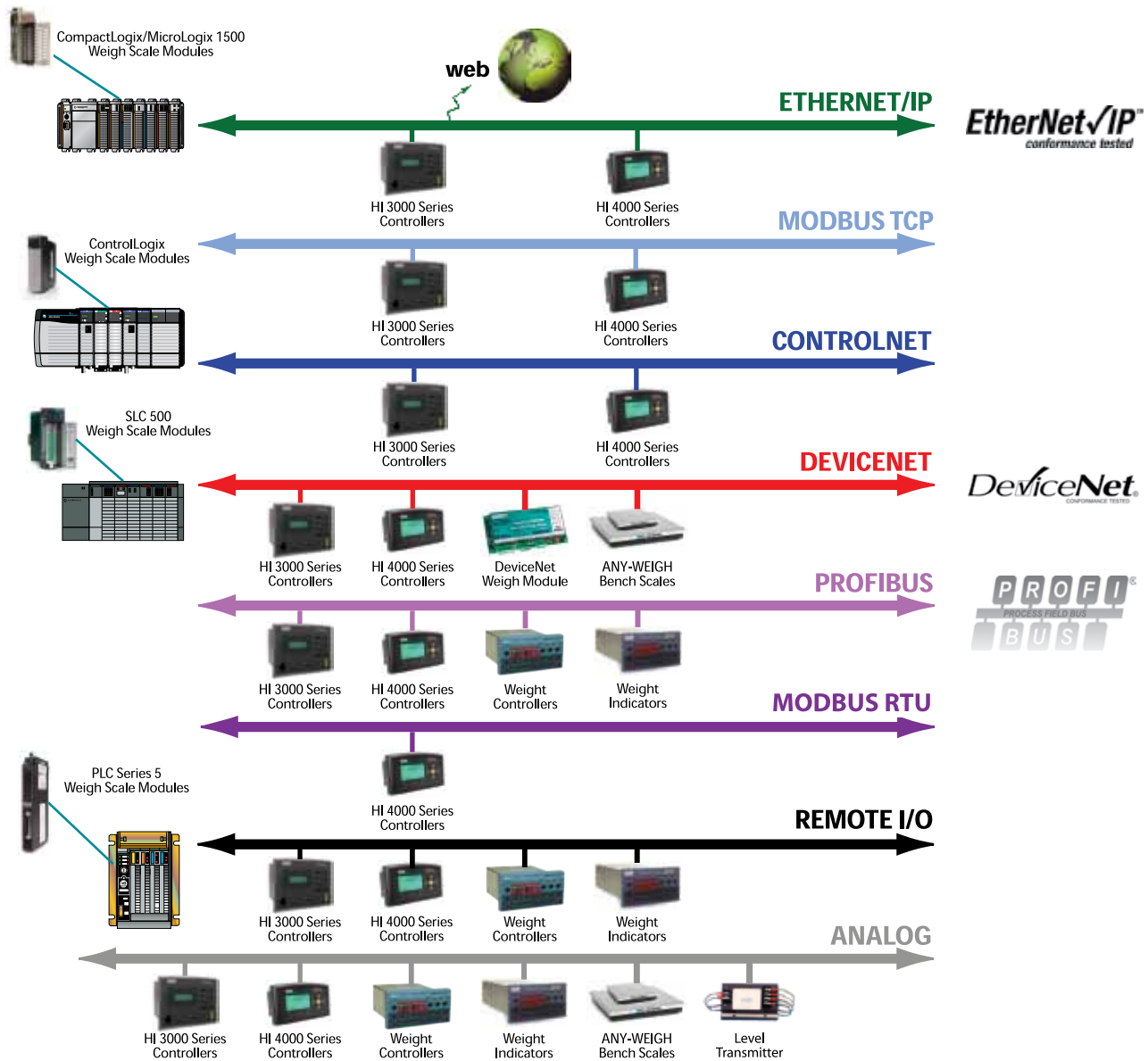
- Designed for use on low to medium capacity vessels in tension settings
- Available in 225 lb, 450 lb, 1125 lb, 2.25K lb, 4.5K lb and 11.25K lb capacities
- Mounting hardware available in stainless or plated steel for capacities to 4.5 Klb, and plated steel in higher capacities

## SINGLE-POINT HI SP SERIES

- Designed for the OEM and Bench scale market
- All Stainless Steel, direct bolting, C2®
- Available in capacities 7.5Kg to 200Kg
- IP65/IP67 HI SP1 Series, or IP68 HI SP6 Series
- Low sensitivity to off center loads

# CONNECTIVITY SOLUTIONS

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



## FIELD SERVICE



Hardy Process Solutions offers field service nationwide. Our technicians and application specialists can service most all weighing manufacturers and are available to visit your facility to help with even your most challenging weighing applications and issues.

Our services include:

### **INSTALLATION/START-UP**

Turn-key installations including: Load Sensors, Cabling, Instrumentation, Calibration/Verification.

### **PERIODIC SERVICE AGREEMENTS, SYSTEM VERIFICATIONS AND CALIBRATIONS**

Our field technicians can perform your required routine periodic system calibrations and verifications to assure accuracy and performance. We will provide certificates of accuracy and calibration and store electronic records.

### **EMERGENCY SERVICE/REPAIR**

We offer 24 Hour 7 Day field service and technical support. Our technicians are available to keep your costly downtime to a minimum!

To request a free onsite visit or survey; please contact Hardy Process Solutions Technical Support: (800) 821-5831

## TECHNICAL SUPPORT



The mission of our Technical Support department is to provide valuable solutions accessible to customers worldwide. We offer a unique blend of support options that give the ability to maintain your facility your way, and we are ready to join your team whenever and wherever you need our expertise.

Service offerings include:

### **ONLINE SUPPORT**

You can quickly find answers 24 hours a day, every day, using WebTech (our online knowledgebase), which can be found on the online support page of our website, along with product datasheets, technical manuals and drawings, sample PLC programs, and a load sensor certification tool.

### **FACTORY REPAIR**

When you need something repaired, upgraded, calibrated or just checked out, our factory repair department is the answer. We will repair or refurbish your Hardy process weighing instrument within two to three working days of receipt at our factory for a flat-rate fee. All repaired instruments are brought up to the latest revision possible and include a 90-day warranty.

### **TRAINING**

Benefit from applications, service or operator training at our San Diego factory, in your facility or via a webinar. Choose from standard courses or work with our training specialists to design a course specific to you.

### **PHONE SUPPORT**

To discuss your questions directly with a factory service expert, just give us a call.

## WORLDWIDE LOCATIONS



**FREE Online and Phone  
Support Anytime  
1-800-821-5831**

Unrestricted Access to Manuals and Drawings Online  
Free Dial-In Technical Support and Applications Support  
Onsite Certified Technicians for Hire

Follow us on Facebook and LinkedIn



**HARDY**  
**PROCESS SOLUTIONS**  
Measurement • Automation • Productivity

Headquarters:  
9440 Carroll Park Drive  
San Diego, CA 92121  
tel. +1-858-278-2900  
tel. 800-821-5831  
fax +1-858-278-6700  
www.hardysolutions.com  
hardyinfo@hardysolutions.com

**ISO 9001:2008**  
**CERTIFIED**  
Since 1993