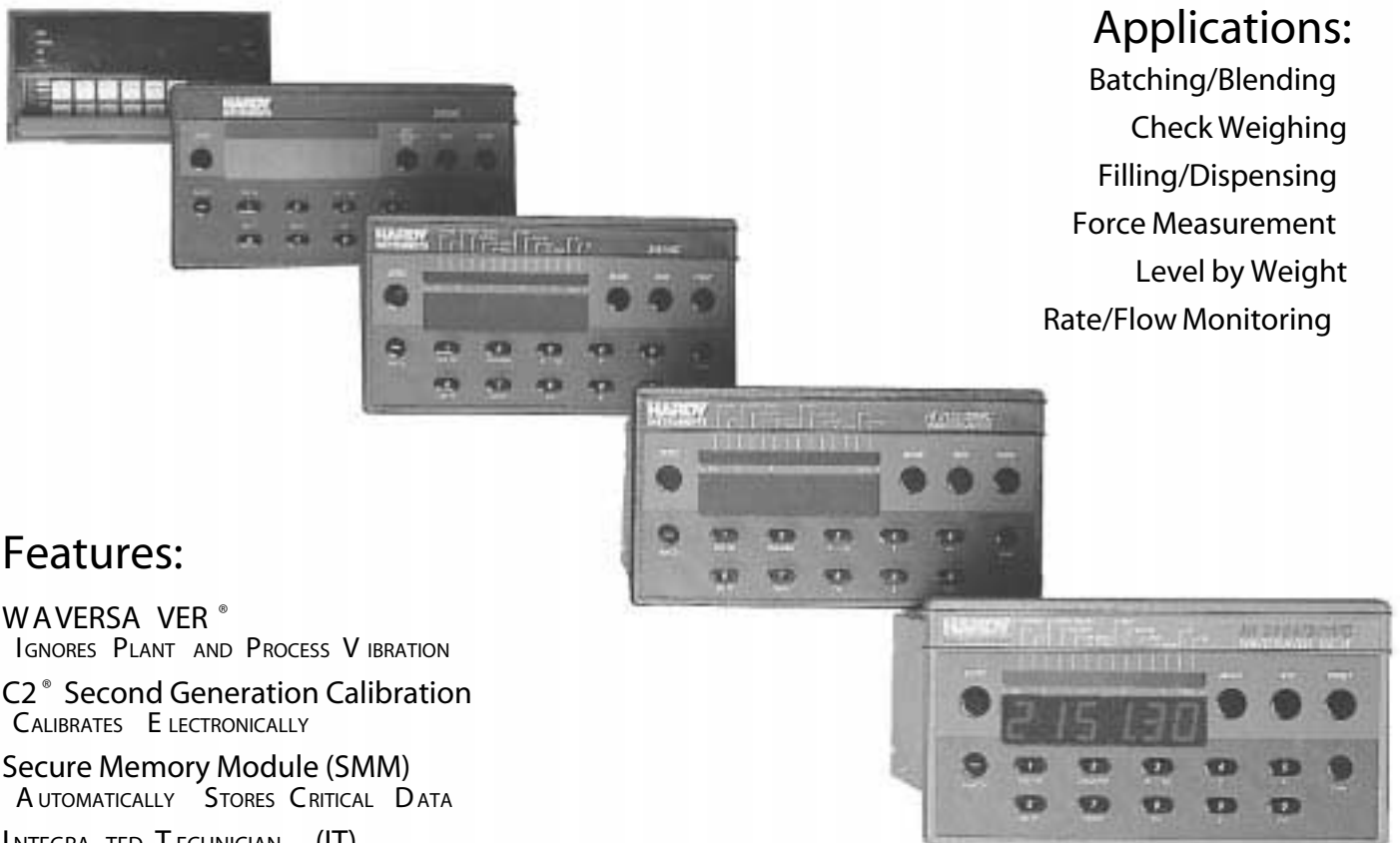




Multi-Purpose Weight Controller

Model HI 2151/30WC



Applications:

Batching/Blending
Check Weighing
Filling/Dispensing
Force Measurement
Level by Weight
Rate/Flow Monitoring

Features:

WAVERSA VER[®]

IGNORES PLANT AND PROCESS VIBRATION

C2[®] Second Generation Calibration

CALIBRATES ELECTRONICALLY

Secure Memory Module (SMM)

AUTOMATICALLY STORES CRITICAL DATA

INTEGRATED TECHNICIAN (IT)

BUILT IN SYSTEM DIAGNOSTICS

Making a good thing better!

Weight Controller with WAVERSAVER®, C2® and IT® - Features and Benefits

Hardy Instruments has always prided itself with the idea of taking a good product design and making it better. We believe that it is easier for the user to learn the new items/features, than to learn a whole new product. Besides, if you have something that is already liked in the industry, you shouldn't redesign it.

The HI 2151/30WC Weight Controller follows in that line of thinking, just as it has in previous versions since 1982. We've taken all the great aspects of the HI 2151/20WC Weight Controller and added features and improved functionality to make installation, setup, and system diagnostics easier than ever before!

Product Design

As you can see from the front cover photo, the basic product design has remained the same on all of our multi-purpose weight controllers to provide an easy upgrade path. Hardy Instruments understands the difficulties in replacing a unit and the space limitations on control panels. That's why we design our products so you can replace an old unit with a new one using the same enclosure cutout.

Front Panel

The front panel key pad and menus follow the same pattern. The current menus and features have been enhanced, but the front panel buttons have remained the same. There is no need to relearn features and functions of an instrument when a new one is installed. The HI 2151/30WC is easy-to-use, especially if you're already familiar with the basic functions of previous versions.

Setpoint Control

The HI 2151/30WC can independently control as many as eight relays based on either net,

One Million Counts of Resolution

The HI 2151/30WC has 1,000,000 counts of resolution yielding better control, accuracy and recording in weighing applications. This is 25-50 times more than the typical weight controller resolution. You can tolerate large dead loads, over sizing of load cells, and still have an abundance of resolution to work with.

WAVERSAVER®

Ignores Plant and Process Vibration
Hardy's exclusive WAVERSAVER® technology quickly ignores unwanted plant and process vibration signals to yield the actual weight.



gross, rate-of-change, peak hold or totalized weight values. Each relay has its own individual preact to compensate for in-flight material, and deadband to compensate for relay chatter.

Display

The 6 digit alpha-numeric red LED display allows for ease-of-use in reading weight values as well as reading menus. A thirty segment bar graph is standard, and can be programmed for various modes and uses.

Plant vibration is ignored, allowing you to accurately weigh ingredient amounts and yield a better quality mix. You can weigh line conveyors, augers and even mixers while they're running!

WAVERSAVER® can now be configured from the front panel of the HI 2151/30WC. Frequencies above 0.25 Hz can be ignored and still respond in about one second with stable readings. For applications with higher frequencies,

WAVERSAVER® can be adjusted to ignore signals above 7.5 Hz with virtually instantaneous response. No complex poles or corners need to be tuned.

C2®, Second Generation Calibration

Calibrates Electronically

Hardy Instruments knows that performing calibration with test weights (hard calibration) can be a long and costly operation, as well as being dangerous. An accurate calibration requires the use of test weights totaling 80% of the scale capacity. That's why we created C2®, Second Generation Calibration.

C2® allows you to calibrate electronically without test weights. Unlike hard calibration, the live weight on the scale doesn't have to be removed and heavy test weights do not have to be repeatedly put on and off the scale. As soon as the scale system is installed it can be C2® calibrated and verified. The result is a calibration that is easier, quicker, safer, and typically more accurate than methods used in the past.

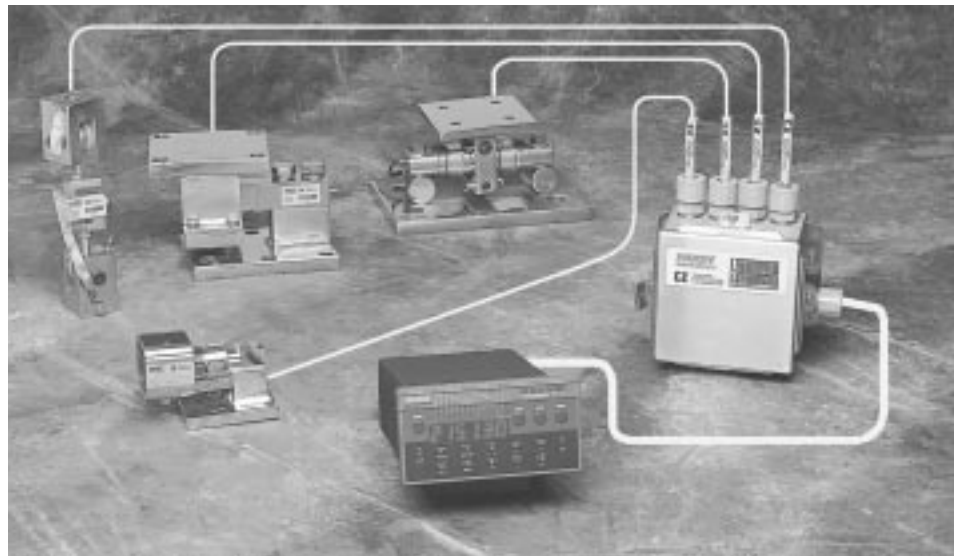
The C2® system reduces downtime for installation and repairs, and eliminates test weight related injuries. In addition, it ends material substitution headaches, including contamination and waste disposal issues.



INTEGRATED TECHNICIAN (IT)

Built-in System Diagnostics

INTEGRATED TECHNICIAN (IT) was designed with customer service in mind. IT lowers weighing system maintenance costs by enabling you to quickly troubleshoot and diagnose some of your own weighing system problems, without the need of highly priced "weighing experts".



IT continuously monitors the weighing systems excitation current for shorted or open load sensors, including the cable between the instrument and the j-box, and notifies you of any errors.

IT also allows you to run various tests from the front panel of the HI 2151/30WC to isolate a problem. These tests display system weights and voltages to help you isolate the problem. One test even provides an internal reference signal to test the integrity of the HI 2151/30WC.

IT J-Box

The IT Junction Box gives you full control of your individual system components so you can isolate problems from the front panel of the HI 2151/30WC. In addition to its summing circuitry, the IT J-box contains electronic switches which can turn off signals to and from individual load sensors in the system.

IT gives you Pass/Fail indication for each of your system load sensors, so you don't have to understand voltages or individual weights!

The IT J-box also contains an internal reference point to test the integrity of the J-box and cable to the instrument. All of this capability is available without the need for extra wires, additional power or batteries.

Secure Memory Module

Automatically Stores Critical Data

The Secure Memory Module (SMM) has been a long time feature of Hardy weight controllers, and is now easily accessible from the back panel of the instrument. The SMM automatically stores and protects critical data for future use when replacing or upgrading a unit. If a problem occurs, simply remove the current SMM and plug it into a new instrument and your system will be up and running in minutes.

In addition to the calibration data being automatically stored and protected from corruption, it is protected from

Cockpit provides application descriptions, wiring diagrams and animations to help you correctly configure and wire your weighing system.

Communication Interfaces

The HI 2151/30WC can act as a stand alone unit or as a front end for a host system transmitting weight values to programmable logic controllers (PLCs), distributed control systems (DCS), and personal computers (PC).



resources. Just select which serial communication you would like and wire the connector accordingly. The standard Hardy Link Local Area Network allows multiple units to communicate over EIA 422 or EIA 485 to a host system in a multi-drop configuration.

Installation

Mounting rails are provided for ease-of-use in installing a panel mount weight controller into an enclosure. Hardy Instruments learned a long time ago that space is limited on enclosure panels, and that it is hard to reach a screw driver all the way to the front of a unit to install it. With the mounting rails, you can install the panel mount weight controller into an enclosure from the back end of the unit.

Applications

The HI 2151/30WC is the latest in a series of weight measurement and control instrumentation used in a wide variety of applications including batching, blending, check weighing, filling and dispensing, force measurement, level by weight and rate monitoring.

Standardization

The philosophy of "making a good thing better" makes standardizing on Hardy products a wise decision. We are committed to our customers and their needs, and plan to provide innovative solutions to problems in a format that is timely and user friendly. Specifying a Hardy product is not just a solution, it is the beginning of a relationship.

vandalism and operator error with a front panel security code for menu entry. This gives you the security you need to maintain an accurately calibrated system, in an easy-to-use format.

COCKPIT



Configuration Assistant

Our powerful new Windows-based software tool lets you configure your weight controllers on a PC in the comfort of your office.

Hardy Instruments provides a wide variety of interface options including Allen-Bradley Remote I/O, Profibus (Process Fieldbus), Analog and parallel BCD.



Standard Networking

The HI 2151/30WC comes standard with an RS 232, EIA 422 or EIA 485 selectable serial port allowing you to share data and

S P E C I F I C A T I O N S

ALPHA -NUMERIC DISPLAY 6 digit, 14 segment red LED	POWER 120/240 VAC± 10%, 47/63 Hz, 10 watts with options installed	ENCLOSURES Panel Mount Display Rating: NEMA 4X Depth: 10" (254 mm) Panel Cutout: 3.09" x 5.75" (78.4 x 146 mm) Weight: 4.6 lbs (2.1 kg)
BAR GRAPH 30 segment LED	OPERATING TEMPERATURE 14° TO 122° F (-10° TO 50° C)	Remote Mount Display Rating: NEMA 4X* Dimensions: 3.23"H x 5.74"W x 10.40" D (82.04 H x 145.8 W x 264.2 D mm) Panel Cutout: 3.09" x 5.75" (78.4 x 146 mm) Weight: 4.6 lbs (2.1 kg) Display mounts separately from the instrument body via a 5 foot cable
RESOLUTION Display 1: 985,000 (3mv/v load cells) Internal 1: 1,048,000	HUMIDITY 0-90% non-condensing	Blind Remote Mount Dimensions: 3.23" H x 5.74" W x 10.40" D (82.04 H x 145.8 W x 264.2 D mm) Weight: 4.5 lbs (2.1 kg) Output option or portable display must be purchased with this unit
UPDATE RATE Up to 20 times per second	EXCITATION 5 VDC internal power supply to drive up to eight 350-ohm load cells	Wall Mount Enclosure Rating: NEMA 4X (stainless steel) Dimensions: 14.25" H x 12.25" W x 6.00" D (361.95 H x 311.15 W x 152.4 D mm) Weight: 19.8 lbs (9 kg)
AVERAGING Sliding of up to 200 readings in single unit increments	STABLE WEIGHT READINGS WAVERSAVER® 0.25 Hz minimum	INPUTS 8 remote functions
ACCURACY 0.0015% non-linearity	CALIBRATION TECHNIQUES C2® Second Generation Calibration: Calibrate electronically SoftCal: Calibrate by manually entering load sensor information from calibration certificate HardCal: Calibrate using tests weights	
SETPOINTS (2 INTERNAL) Setpoint (target weight); Preact (trip point); Deadband (reset); 115 VAC, 3 amp, Form C	DATA SECURITY Secure Memory Module	
COMMON MODE REJECTION 100 dB at 50-60 Hz	BUILT IN DIAGNOSTICS INTEGRATED TECHNICIAN (IT)	
STANDARD NETWORKING OPTIONS RS 232 Full duplex (-A1) EIA 422 Full duplex (-A1) EIA 485 Half duplex (-A1) Hardy Link LAN		

* NEMA 4 rating when mounted in a NEMA enclosure. Specifications subject to change without notice.

Customer Service

We Stand Behind Every Instrument Sold

Thanks to features like T and C2®, most troubleshooting can now be done by yourself over the phone with the help of Hardy personnel. We provide a direct connect national toll free number (800) 821-5831. Field service engineers are available for installation assistance, and product training, as well as field troubleshooting and repair. On-site training is available, and can be customized for your factory and personnel.

Over eighty years of expertise in industrial weighing ensures future availability and unsurpassed quality. And since we design and

manufacture our own products, you can always count on our in-house experts for accurate answers to your questions. Hardy Instruments' knowledgeable manufacturers representatives, regional sales managers and application engineers can help you define a system specific to your application. You can call your local representative, or call us toll free at.....

1-800-821-5831



HI 2151/30WC – WS
Wall Mount Unit. All versions
have waterproof key pads / display

O P T I O N S

Analog Output of Net, Gross,
Rate-of-Change, Total or Peak Weights (-B1)
Resolution: 16,000 count
Current: 0 – 20 or 4 – 20 milliamps
Voltage: 0 – 5 or 0 – 10 VDC

Parallel BCD (-B2, -B5 or -B9)
6 digits of data representing Net, Gross,
Tare or Display with tri-state capability
(6", 60" or 24" cable).

BCD Termination Boards
Single (-B6), Quad (-B7)

DDE I/O Server (-B14)
Allows bi-directional communications with a
PC over the serial port using Windows™
based software packages.

PROFIBUS (-B12)
Allows bi-directional communication to a
multitude of Profibus (Process Fieldbus)
products, including Siemens, GE FANUC,
Group Schneider (Modicon/Square D),
Mitsubishi, OMRON and Klockner-Moeller
Controllers.

Remote I/O Interface for the
Allen-Bradley Network (-B8)
Allows bi-directional communications with
Allen-Bradley Programmable Logic
Controllers (PLC) and Small Logic
Controllers (SLC).

TTL Level Output (-D1)
Six external setpoints, each with 500 milliamp
sink, can independently monitor Net, Gross,
Rate-of-Change, Peak Hold or Total.

Setpoint Relay Option Card (-D2)
Six additional opto-isolated solid state relays,
each rated at 115V $\sqrt{3}$ amp, operates from TTL
Level Outputs.

240 VAC, 50/60Hz
Operation (-E2)

NIST/NTEP
Panel, Remote and Blind (-E3)
Wall mount (-F2)

Intrinsic Barriers
Are available for Class I, II and III
Division I applications.

Totalization (-C6)
Maintains a running total of net weight
activated by a contact closure Total
weight can be viewed or transmitted.

Rate-of-Change (-C2)
Computes the current flow rate into or out
of the scale and displays and/or transmits as
a change in weight per unit time.

Peak Hold (-C1)
Monitors and stores highest value measured
until cleared by operator or from remote
command.

Portable Display (-E4)
For Blind Remote mount only.
Plugs in for local set-up and calibration.

O R D E R I N G I N F O R M A T I O N

HI 2151/30WC
Panel Mount Unit

HI 2151/30WC -RM
Remote Mount Unit. Display mounts 5 feet
from instrument body.

HI 2151/30WC -BR
Blind Remote Mount. Keypad/display is not
included. Output option or portable display
is required.

HI 2151/30WC -WS
Wall Mount Unit. NEMA 4X stainless steel.

Ordering Example
A panel mount HI 2151/30WC with RS 232,
Remote I/O, and Totalizer would be ordered
as follows: HI 2151/30WC-A1-B8-C6

C E R T I F I C A T I O N S

UL
Underwriter Laboratories Inc.
Component Program



CSA
Canadian Standards Association



NTEP
10,000 Counts Accuracy Class II/III L



FM
Class I, II, III Div. 2 Groups A-G



CE



HARDY
INSTRUMENTS

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HI2151/30C

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ISO 9001
CERTIFIED