

Hardy E-Scale™

World's First IIoT Ready Scale Base

Applications

PROCESS WEIGHING

- Piece Count, Portion Control
- Minor Ingredients or Hand-Add applications
- Small Batch Reactor Applications in Chemical/Biochemical
- Machine Filling and Dispensing
- Conveyor Scales
- Shipping



Features THE HARDY PROCESS TOOLBOX

The Hardy Process Toolbox is a set of productivity tools that delivers value across process weighing functions. Each tool saves time, increases accuracy, improves efficiency or reduces risk in your process weighing applications.



Electronic calibration without test weights



Vibration immunity from mechanical noise

WAVERSAVER®

33 lbs to 1,300 lbs Capacities

EDS Add-On-Profiles

Faceplate/AOIs (6500/6510 models)

Overload Protection

- **300% R.O.* Overload**
- **400% R.O. Ultimate Load**

(*Rated Output)

IIoT Ready Intelligent Scale with Integrated Communications

The new Hardy E-Scale Bench scale series is the world's first IIoT-ready (Industrial Internet of Things) scale base. It includes an integrated Hardy weight processor for direct network connection for either EtherNet/IP® or Profibus-DP® networks. Depending on configuration, the E-Scale offers complete flexibility in size and capacity for use in many weighing applications. E-Scales eliminate possible failure points and save the cost of extra splice-boxes and other components.

With their rugged construction and stainless steel tops, E-Scales are a great fit for dry food processing, laboratory and industrial installations. The E-Scale line of bench scales comes in a variety of configurations with a built-in interface for direct connection to a PLC, PAC, DCS or PC. All E-Scales come standard in 12"x12" and 24"x24" sizes, and range in capacity from 33 lbs – 1300lbs (15 to 600 kg).

The covers are all stainless steel for durability. The bases have no bearings, spirit levels, or moving parts that can be damaged or wear out. They feature the Hardy Process Toolbox, including Waversaver®, C2®, Webserver, and Rockwell Automation integration tools such as Faceplates, and Add-on-profiles.

E-SCALE-6500 or 6510**

IIoT ready scale with integrated weight processing and communications. No DIN or panel space is required. The E-Scale-6500 or 6510 delivers stable processed weight with a resolution of 1:10:000, and a speed of 110 updates per

second (processor, display and comm.). Industrial Network protocols supported include:

- EtherNet/IP (-EIP models)
- Ethernet UDP
- Ethernet TCP/IP(Embedded Webserver)
- Modbus RTU
- Modbus TCP (-EIP models)
- Profibus-DP (-PB models)
- Analog 4-20 mA (6510 models only)

** User must supply 24VDC power to the scale

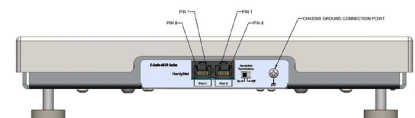
E-SCALE-6610*

Capable of powering up to 20 scales daisy chained up to 50 ft from beginning to end to a single Hardy HI 6600 Gateway Module. The Gateway Module provides a Single Ethernet connection back to the PLC/PAC or PC – No additional power is required! Gateway Module has an optional panel mount multichannel display (multichannel) that can be used to operate connected E-Scales.

HI6600 Gateway communications include:

- EtherNet/IP (-EIP models)
- Ethernet TCP/IP(Embedded Webserver)
- Modbus RTU

Even in noisy environments with excessive amounts of mechanical vibration, the E-Scale-6610 provides a steady 1:10:000 resolution with 110 updates per second over its variety of communications protocols.



COMPONENTS TO COMPLETE YOUR HARDY SYSTEM

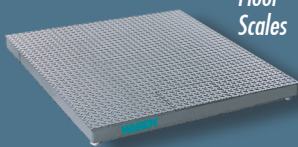
Hardy Floor Scales and Load Points

Hardy carries a wide variety of strain gauge load points and scale mounts to accommodate your application requirements.

ADVANTAGE Series with C2 Calibration



Floor Scales



Weighing Instruments Dedicated to Your Applications

Controllers, Weigh Modules, Weight Processors & Transmitters

Allen-Bradley® Compatible Plug-in Weigh Scale Modules



HI 3000 & HI 4000 Controllers and HI 6000 Series Weight Processors



SPECIFICATIONS

Platter Construction

- 304 Stainless Steel (all models)
- Size: 12" x 12" and 24" x 24"

Rated Output

- 0.900 ± 0.0009mV/V

Combined Error

- 0.030 %R.O.

Creep @ 30 min

- 0.030 %R.O.

Zero Balance

- 5.0 % R.O.

Temp Effect Output

- 0.0015% R.O./°F

Temp Effect Sensitivity

- 0.0008 % R.O./°F

Temp. Range

- Operating -10 - +40°C
- Storage -10 - +65°C

Resistance

- Input: 297.5 ± 10% ohm
- Output: 250 ± 5% ohm

Safe Load Limit: 300 % Emax

Ultimate Load Limit: 400 % Emax

Max. Cornering Error

- 0.06% 1/2 full scale load, 1/2 way to corner

Resolution

- Stable processed weight 1:10,000
- Maximum displayed resolution: 1:999,999
- Internal resolution 1:8,388,608

Update Rate

- 110 times per second (processed weight, display, communications)
- Unprocessed weight (A/D conversion) 4800 times per second

Modes: Gross, Net, Count

Units of Measure

- Ounce, Pound, Ton, Gram, Kg, Pieces

Weight Processing

- WEVERSAVER®: .25 Hz to 7.5 Hz
- Averaging: 1 to 255 User-selectable in single increments

Calibration Methods:

- C2® calibration without test weights
- Traditional calibration with test weights

Communications Interface

- Terminal, RJ-45 (6500)
- RJ45 / Cat5e (6610)

Optional HI 6110 Display (6610 only)

- 80:1 contrast ratio with 4.3" effective viewing area
- 140° viewing angle
- Control configure, and view one to four scales on a single front panel simultaneously

Power

- 24 VDC from supplied power source (6500 models)
- 24 VDC, Class 2 Source, max 3.9 Watts from HI 6600 Gateway (6610 models)

Approvals: UL and CE

Warranty: Two years against defects in workmanship

Hardy E-Scale Models

Model Number HI6610 Models	Dimensions		Recommended Capacity	
	Inches	mm	Lbs / Kg	Divisions Lb/Kg
E-SCALE-6610-1212-33	11.75" x 11.75"	298 x 298	33 / 15	0.01 / 0.01
E-SCALE-6610-1212-66	11.75" x 11.75"	298 x 298	66 / 30	0.02 / 0.01
E-SCALE-6610-1212-130	11.75" x 11.75"	298 x 298	130 / 60	0.05 / 0.02
E-SCALE-6610-2424-130	23.62" x 23.62"	600 x 600	130 / 60	0.05 / 0.02
E-SCALE-6610-2424-330	23.62" x 23.62"	600 x 600	330 / 150	0.1 / 0.05
E-SCALE-6610-2424-660	23.62" x 23.62"	600 x 600	660 / 300	0.2 / 0.1
E-SCALE-6610-2424-1300	23.62" x 23.62"	600 x 600	1,300 / 600	0.5 / 0.2

NOTE: All E-SCALE-6610 versions require HI6600 Gateway Module to Operate

Model Number HI 6500 Models with EIP	Dimensions		Recommended Capacity	
	Inches	mm	Lbs / Kg	Divisions Lb/Kg
E-SCALE-6500EIP-1212-33	11.75" x 11.75"	298 x 298	33 / 15	0.01 / 0.01
E-SCALE-6500EIP-1212-66	11.75" x 11.75"	298 x 298	66 / 30	0.02 / 0.01
E-SCALE-6500EIP-1212-130	11.75" x 11.75"	298 x 298	130 / 60	0.05 / 0.02
E-SCALE-6500EIP-2424-130	23.62" x 23.62"	600 x 600	130 / 60	0.05 / 0.02
E-SCALE-6500EIP-2424-330	23.62" x 23.62"	600 x 600	330 / 150	0.1 / 0.05
E-SCALE-6500EIP-2424-660	23.62" x 23.62"	600 x 600	660 / 300	0.2 / 0.1
E-SCALE-6500EIP-2424-1300	23.62" x 23.62"	600 x 600	1,300 / 600	0.5 / 0.2

Model Number HI 6510 With EIP & Analog	Dimensions		Recommended Capacity	
	Inches	mm	Lbs / Kg	Divisions Lb/Kg
E-SCALE-6510EIP-1212-33	11.75" x 11.75"	298 x 298	33 / 15	0.01 / 0.01
E-SCALE-6510EIP-1212-66	11.75" x 11.75"	298 x 298	66 / 30	0.02 / 0.01
E-SCALE-6510EIP-1212-130	11.75" x 11.75"	298 x 298	130 / 60	0.05 / 0.02
E-SCALE-6510EIP-2424-130	23.62" x 23.62"	600 x 600	130 / 60	0.05 / 0.02
E-SCALE-6510EIP-2424-330	23.62" x 23.62"	600 x 600	330 / 150	0.1 / 0.05
E-SCALE-6510EIP-2424-660	23.62" x 23.62"	600 x 600	660 / 300	0.2 / 0.1
E-SCALE-6510EIP-2424-1300	23.62" x 23.62"	600 x 600	1,300 / 600	0.5 / 0.2

NOTE: All E-SCALE-6500 versions require separate 24VDC Power

Model Number HI 6500 with Profibus DP	Dimensions		Recommended Capacity	
	Inches	mm	Lbs / Kg	Divisions Lb/Kg
E-SCALE-6500PB-1212-33	11.75" x 11.75"	298 x 298	33 / 15	0.01 / 0.01
E-SCALE-6500PB-1212-66	11.75" x 11.75"	298 x 298	66 / 30	0.02 / 0.01
E-SCALE-6500PB-1212-130	11.75" x 11.75"	298 x 298	130 / 60	0.05 / 0.02
E-SCALE-6500PB-2424-130	23.62" x 23.62"	600 x 600	130 / 60	0.05 / 0.02
E-SCALE-6500PB-2424-330	23.62" x 23.62"	600 x 600	330 / 150	0.1 / 0.05
E-SCALE-6500PB-2424-660	23.62" x 23.62"	600 x 600	660 / 300	0.2 / 0.1
E-SCALE-6500PB-2424-1300	23.62" x 23.62"	600 x 600	1,300 / 600	0.5 / 0.2

NOTE: All E-SCALE-6500 versions require separate 24VDC Power



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