

Belt-Way Scales, Inc.



Conveyor Belt Scales

Product Brochure

Belt-Way[®] **Conveyor Belt Scales**

The Belt Scale You Can Trust

- Fits Any Width Conveyor
- Easy to Install
- Easy to Calibrate
- Stays Calibrated
- Durable
- Accurate
- Repeatable



Conveyor Belt Scales

Scale Features

Fits Any Width Conveyor

The modular **BELT-WAY**[®] design is simple, yet versatile. The **BELT-WAY**[®] scale fits any width conveyor.

Easy Installation / Calibration

The unique **BELT-WAY**[®] design is easy to install on virtually any stationary or portable conveyor. Calibrate with the touch of a button using static test weights, or a material test.

Accuracy

The Patented **BELT-WAY**[®] Load Cell Assemblies house OIML Certified Load Cells. Expected margin of error for a Single Idler Weighing System is +/-0.5 %. Expected margin of error for a Dual Idler Weighing System is +/-0.25 %. Expected accuracy is based on weight range of 25% to 100% of design capacity, when installed and calibrated according to Instruction Manual guidelines.

Advanced, Weatherproof Electronics - CE

The **BELT-WAY**[®] Integrator (Control Box) features a state-of-the-art microprocessor and easy-to-read 4 line, 20 character, Vacuum Fluorescent display. The weather-proof NEMA 4X enclosure provides excellent E.M.I. / R.F. resistance for reliable operation. The integrator is also fully CE approved. Power the Integrator with 110-220 VAC or 12-24 VDC. 4-20 mA, Digital Pulse, Serial Modbus RTU, or Modbus TCP options are available.

Belt-Way[®] Integrator



Stationary Conveyors



Production Monitoring / Data Collection

The **BELT-WAY**[®] Integrator is equipped with an RS-232 communication port to drive Remote Displays, Printers, or other Serial Device.

The Integrator also includes a High-Speed NETWORK to interface with a PC, or **BELT-WAY**[®] Remote Display. The **BELT-WAY**[®] Data Collection Software provides data monitoring locally or via the Internet.

Wireless options for Modbus Serial RTU, Modbus TCP, and the **BELT-WAY**[®] Software are available.

For Production Data You can Trust

Production Monitoring and Reports

Touchscreen Remote Display

Monitor production on site or via the Internet. Automatically generates a broad range of vital production reports.

SCALE / PRODUCT	TOTAL TONS	TONS / HR	FEET / MIN	LOAD %	SET ZERO	RESET TONS
PRIMARY					START	●
SHOTROCK	941	621	446	61	START	●
CV2					START	●
STONES	294	207	461	37	START	●
CV5					START	●
3/4 ROAD	188	124	281	56	START	●
CV8					START	●
SAND	78	81	288	48	START	●
CV13					START	●
GRAVEL	197	214	387	51	START	●
CV12					START	●
FINES	31	18	415	42	START	●
FEED					START	●
DUST	37	39	259	39	START	●
DISCHARGE					START	●
LIME	114	137	338	46	START	●

MENU HELP Date: 10/15/2010 Time: 09:10

Real-Time Monitoring



Internet



Production Reports



Handheld



Printer

Portable Equipment



Ideal for Garland Style Idlers!

Durable - Versatile



Automatic Angle Compensator

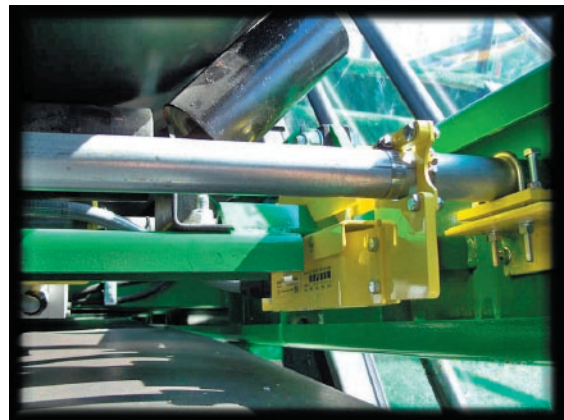
This unique option eliminates the need for re-calibration due to changes in the conveyor's angle of elevation. Used on portable equipment and Stacking Conveyors.



Portable Crushing, Screening, and Milling

Solutions for Challenging Weighing Applications

Portable Crushing and Screening Equipment



Asphalt Milling Equipment



Universal Scale Components (Stainless Steel Construction Available)

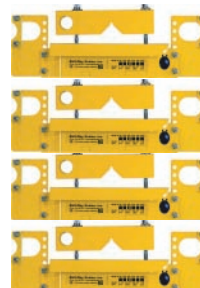
SINGLE IDLER

- Control Box with Power Supply
- Digital Speed Sensor
- 2 Load Cell Assemblies
- 1 Mounting Hardware Kit
- 2 Load Cell Mounting Pipes



DUAL IDLER

- * For Maximum Accuracy *
- All Single Idler Components, PLUS:
- 2 Additional Load Cell Assemblies
- 1 Additional Mounting Hardware Kits
- 2 Additional Load Cell Mounting Pipes
- 1 Junction box with Extension Cable



The Integrator

NEMA 4X Enclosure

The **Belt-Way** Integrator is housed in a weather-proof, corrosion-resistant, fiberglass enclosure. Dimensions are 8.5" x 7" x 4.5". An interior atomized metal coating resists Electromagnetic and Radio Frequency Interference.

Power Supply

A power supply is included for use with 120 volt AC or 220 volt AC. Direct connection to a 12 volt DC or 24 volt DC source requires no power supply.

4 line by 20 Character Display

The easy to read Vacuum Fluorescent Display provides accumulated weight, current production rate (in English, or Metric tons per hour), belt speed, and percentage of scale capacity. Master totals, calibration settings, and a wide variety of production info are accessible from the touch-sensitive keypad.

RS-232 Port

Print tickets or display scale data on a Scoreboard style display using the standard RS-232 ASCII Output.

The Belt-Way NETWORK

The **Belt-Way** NETWORK transmits information via coaxial cable. Built-in PID Loop Control for flow rate control and blending requires the optional 2 Channel I/O Board. Collect data from one or multiple scales to monitor production on site or via the internet using the optional Belt-Way Touchscreen Remote Display or the Belt-Way Scale View database.

Auto Zero Function

Automatically compensates for variance, due to build-up of material on the empty belt, or changing weather conditions.



2 Channel I/O Board

LOW SPEED ALARM / SPEED INTERLOCK:

Output P4.3 turns ON when your belt goes below a programmed speed. Use this output to alert the operator to belt problems (broken or slipping belt). The Speed Interlock function turns output P4.3 ON when the Belt goes OVER the programmed Speed. Use this output to turn on an Alarm to indicate conveyor is running, or start another device.

REMOTE CLEAR WT:

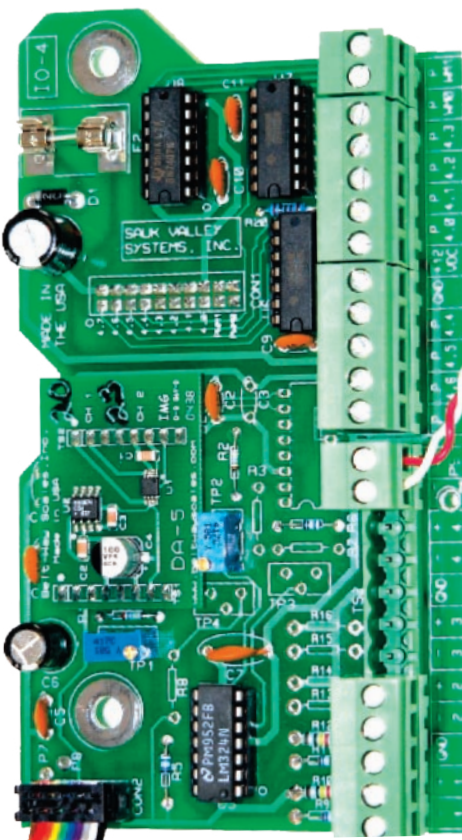
Use a Momentary Push-Button to ground output P4.4 to clear the accumulated weight total from a remote location.

REMOTE PRINT:

Use a Momentary Push-Button to ground output P4.5 to print a ticket.

4-20mA RATE OUTPUT:

Two independent 4-20mA Outputs may be used in conjunction with a Chart Recorder, Variable Frequency Drive, or PLC to track production or control material flow.



PWM1 - NET FAIL or MAX OUT NODE
PWM0 - ON When Rate is Less Than MIN RATE
P4.3 - Low Speed Alarm / Speed Interlock
P4.2 - External Counter (Channel B)
P4.1 - External Counter (Channel A)
P4.0 - Batching/Loadout
+12VDC - Supply for Inputs and Outputs
GND - Common
P4.4 - Clear Weight (input)
P4.5 - External Print (input)
P4.6 - Select Load (input)
P4.7 - Reset PID Loop (input)
+PS - 12VDC Power Supply to I/O Board
-PS - Common Power Supply to I/O Board

Current Loop #2 + Output
Current Loop #2 - Output
GND
Current Loop #1 + Output
Current Loop #1 - Output

LOW SPEED ALARM / SPEED INTERLOCK:

May be connected to an external counter or PLC. The pulse width and value are configurable. Each pulse can equal 10 tons, 1.0 ton, 0.1 tons, or 0.01 tons. The output may also be configured as a True Quadrature Wave.

Ethernet / Modbus Converter

The Belt-Way Ethernet / Modbus ® Converter is a powerful communication device used to simplify production tracking and management of Belt-Way Belt Scales.

FEATURES

- Up to 20 Belt-Way scales can be connected to a single converter in several flexible configurations.
- Programmed to interface with the Belt-Way Scale View web database, the Belt-Way Touchscreen Remote Display, and virtually any other Modbus ® HMI or PLC.
- Can connect to stand alone devices (PC or PLC) or networks (hardwire or wireless)
- The converter is compatible with Modbus ® TCP/IP or Modbus ® RTU (RS232).

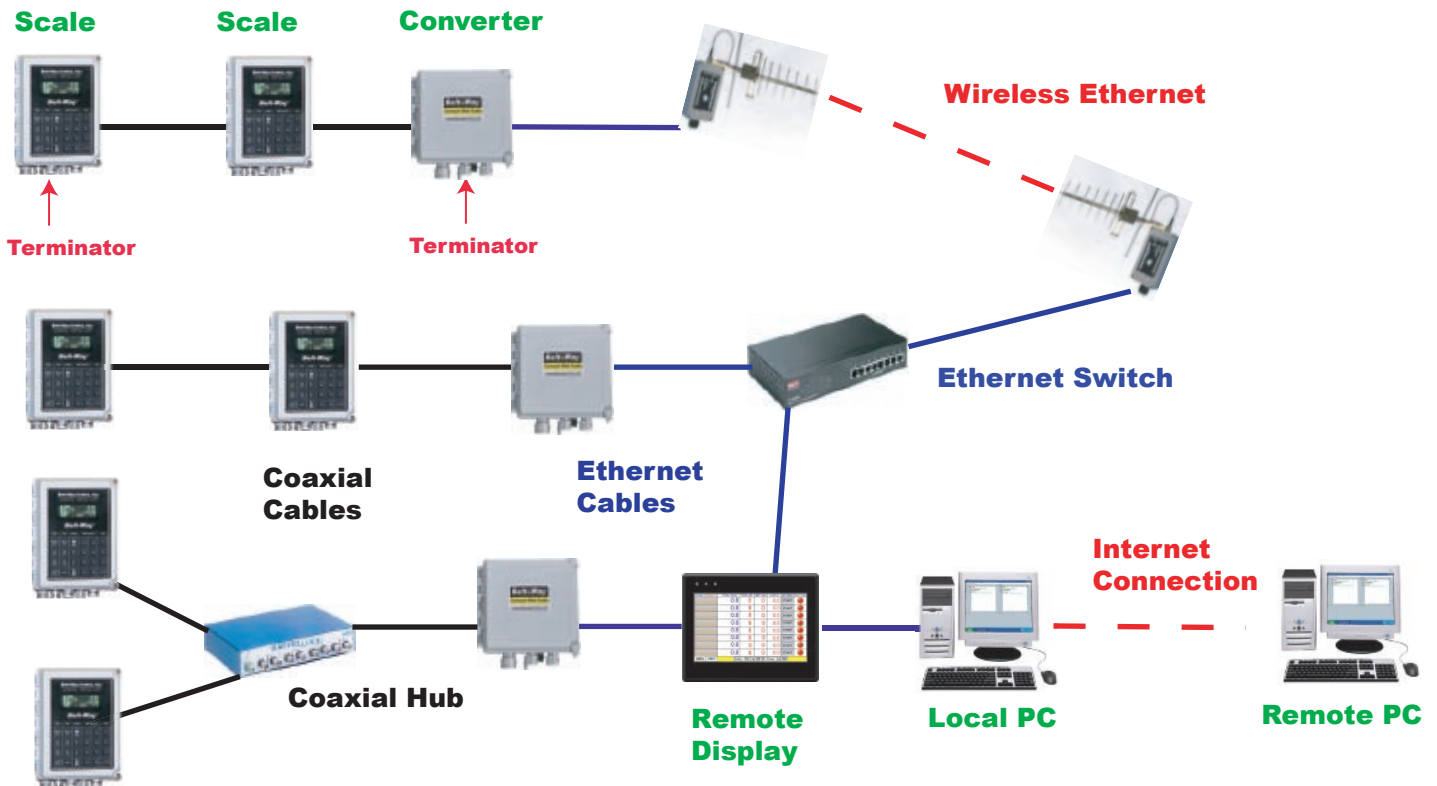


SPECIFICATIONS

Power requirements: 12-24 VDC
Enclosure dimensions:
6.5" x 6.5" Standard
10.5" x 8.5" when paired with
a Wireless Ethernet Bridge
Temperature: -15 to +60 degrees C
Environmental: NEMA 4,
Suitable for outdoor use.
Serial Data Rate:
Configuration: 9600 baud
Modbus RTU: 1200 to 19200 baud
Ethernet Data Rate: 10/100 Mbps

Network Configuration

Hardwire or Wireless networks may be used to connect multiple scales to a Remote Display or the Internet.



Network Termination

Control Box or Converter

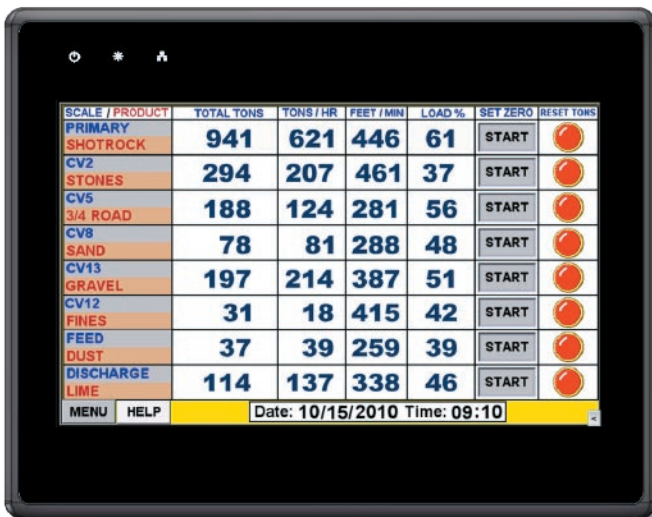
Coaxial Network Cable



Terminator



Belt-Way[®] Touchscreen Remote Display



Monitoring

- Monitor Multiple Scales on 1 Display
- Clear Totals for Any or All Scales
- Re-Zero Any or All Belts
- Fingertip Access to All MENUS
- Wireless Connection Optional

Reporting

- Total Tons Graph
- TPH Graph
- Daily, Weekly, Monthly Totals
- Down-Time per Shift
- Percentage of Target Production per Shift
- Download Data Log to USB Key
- Print Production Reports



Scoreboard Remote Display



The **Belt-Way** scoreboard display is designed for outdoor industrial environments. The user can display the Total Weight, Tons Per Hour or alternate between the two. Typical applications include truck load-out and dredging operations

Recommended viewing distance:

2" High Characters: Maximum 75 feet

4" High Characters: Maximum 150 feet

6" High Characters: Maximum 250 feet

Installation:

A Mounting Bracket and Visor are included for wall or pole mounting.

Wiring:

Simply connect the cable from the display to the scale's removable RS-232 connector. White Wire to GND, Green Wire to TXD.

Automatic Angle Compensator



The **Belt-Way Automatic Angle Compensator** is ideal for use on portable crushers, portable screeners, and stacking conveyors. This device eliminates the need for re-calibration due to a change in the conveyor's angle of elevation. Just set up at the new jobsite, do a SET ZERO and run!

Installation:

The Automatic Angle Compensator simply bolts to the frame of the conveyor.

Wiring:

1. LOCATE ANGLE SENSOR CONNECTOR ON TERMINAL STRIP INSIDE CONTROL BOX.
2. REMOVE JUMPER FROM TERMINALS MARKED SIG AND A-GND.
3. CONNECT CABLE TO ANGLE SENSOR CONNECTOR IN SCALE CONTROL.

Black & White Wire - GND
Red Wire - +5VDC
No Connection Required - A-GND
Green Wire - SIG

Remote Start / Stop Station

Easy Setup of **Belt-Way** Scale Control for Automated Load-Out:



1. **Press F5** on the Keypad to enter 8 different Load-Out amounts.

Note – A CUTOFF amount may also be entered to allow for material between cutoff point (i.e. hopper gate or feed belt) and scale.

Operating Instructions for the **Belt-Way** Remote Start / Stop Station:

2. **SELECT DESIRED LOAD-OUT AMOUNT** using the 8 position Selector Switch (lower right)
3. **PRESS ENTER LOAD BUTTON** (lower left): The selected Load-Out amount appears on line one of the Scale Control Display
4. **PRESS CLEAR “READY” BUTTON** (upper left): The “READY” light will turn on and scale weight will appear as .000 on line two of the Scale Control Display
5. **PRESS START “RUN” BUTTON** (upper right): The “RUN” light will turn on and material flow begins.



When the scale weight reaches the Load-Out amount (minus the CUTOFF weight), the scale material flow stops automatically.

You may stop the conveyor, or pre-feed device at any time during Load-Out by pressing the STOP button (middle right). Load-Out is resumed by pressing the START “RUN” button (upper right). Load-Out may be aborted entirely by clearing LOAD WT on the Scale Control



PRESS PRINT (middle left) on Remote Start / Stop Station to print a ticket using the **Belt-Way Panel Mount Printer**.

Rugged Ticket Printer

PRINT A Ticket On Demand

From the Belt-Way Controller:

1. Press the F7 Key.
2. Press the SELECT key. The cursor appears on line 1 by RS-232.
3. Press the UP ARROW key to change OFF to TICKETS.
4. Line 1 now reads "RS-232 TICKETS"
5. Press SELECT again. The cursor jumps to line 2 by the word USE
6. Press the UP ARROW to adjust the number of line feeds.
7. Line 2 now reads Use X line Feeds
8. Press F8 to print a ticket.

Sample Ticket

SCALE # 1
TICKET # 3
TIME 10:23:05
DATE 03/31/11
WEIGHT 20.12



SPECIFICATIONS

Printer Type: Thermal
Power requirements: 12-24 VDC @ 1 A
110-220 VAC with included transformer
Enclosure dimensions: 8" x 6" x 4"
Temperature: -15 to +60 degrees C
Environmental: NEMA 4,
Suitable for outdoor use.
Serial Data Rate: 9600 baud



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Contact Information:

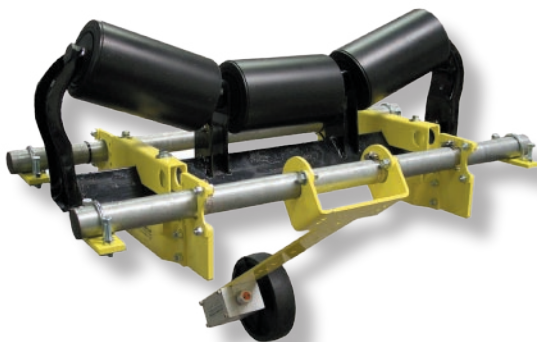
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