Vynamic® Scale - An Advanced Security Scale for the Next Generation of Self-Service

The validation of item weights within a self-service checkout process requires complex algorithms and, in the past, has been a source of frustration for consumers and retailers alike. Simply connecting a weight-based security scale to verify item weight does not give an accurate solution, nor an agreeable consumer experience. With Vynamic® Scale, Diebold Nixdorf offers the most advanced self-learning, weight-based security solution on the market. A sophisticated algorithm combined with complete configuration removes the "unexpected item" nightmare of the past, but it does more than that. Utilizing DN's more OPEN strategy, the solution enables the easy adaptation of Diebold Nixdorf self-service security scales to a third-party, self-service application and guarantees the correct validation of item weights. Sophisticated Item Weight Management ensures that items are easy to maintain, and the proven Weight Learning Strategy regulates the weight intervals that are accepted. In addition, Vynamic Scale Store Manager provides full reporting capabilities. Thanks to our open API platform approach, it is possible to extract the security scale handling from Diebold Nixdorf's full self-service application Vynamic Self-Service and make it available for native self-service applications.

SEPARATED STANDALONE SOFTWARE MODULES

Diebold Nixdorf is the only supplier on the market to offer a completely modular approach to software, with standalone software modules for each of the self-service functions. By separating Vynamic Scale from Vynamic Self-Service we can offer a complete security scale handling package. Our open-API philosophy enables faster and easier integration of advanced security features for third-party, self-service applications. All that is required is an interface between Vynamic Scale and the retailer's POS application. Diebold Nixdorf also offers a browser-based Vynamic Scale Store Manager for reporting functions and statistics.

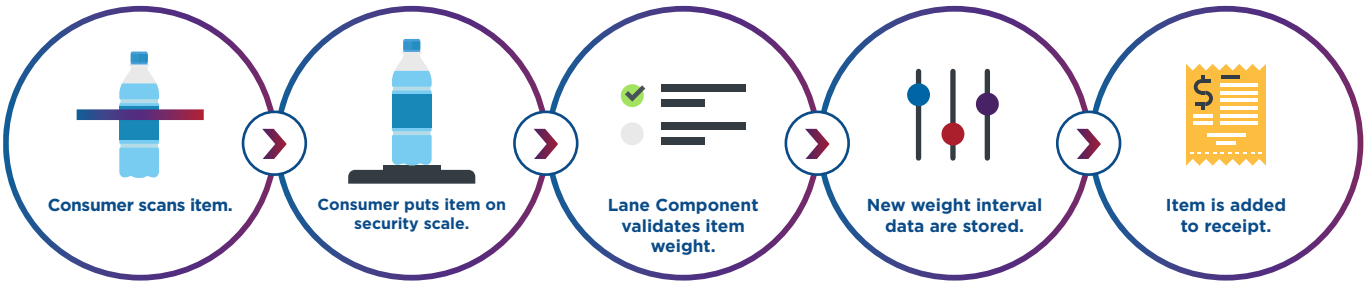
VYNAMIC SCALE COMPONENTS

Vynamic Scale consists of a Lane Component and a Server Component. The Lane Component runs silently on the self-service unit's PC, connecting the POS application to the security scale and validating the item weight against the local or central weight database. The Server Component runs either on a separate workstation or on one dedicated lane in the store. It manages the central scale server database within the store. Each lane also runs a local server for offline situations and is replicated periodically.

A FULL-BLOWN PACKAGE

For proper item validation, Vynamic Scale comes with a Weight Learning Strategy. Statistical methods are used to define weight intervals against which item weight is checked. In addition, it consists of Item Weight Management to define weight classes to which articles can be assigned. An optional HTML5 user interface for checking hardware status and providing functions for maintaining items is also part of the package, as is the Vynamic Scale Client Simulator for simulating transactions to test the interface.

Vynamic® Scale



THE SECURITY CHECK WITH VYNAMIC SCALE:

One by one check of scanned items:

- **Step One:** The consumer scans an item
- **Step Two:** The consumer puts the item on the security scale
- **Step Three:** The Lane Component validates the item weight; a mismatch will result in an assistant intervention to confirm or ignore the item weight
- **Step Four:** New weight interval data are stored
- **Step Five:** The item is added to the transaction receipt

THE WEIGHT LEARNING STRATEGY

- Statistical methods are used to define weight intervals according to the Gaussian curve principle
- Vynamic Scale learns up to 100 weights into one interval and allows up to 3 intervals per item
- A weight that fits the interval is silently added and the interval changes while the oldest weight is deleted
- A weight that does not fit the interval will result in an intervention; the assistant either accepts the weight and thus opens a new interval, or ignores it and solves the problem with the item
- Adding a new interval in case of 3 existing ones will result in deleting the least precious one
- An unknown item automatically creates the first interval
- Significant overlap of intervals leads to merging into a single interval

THE ITEM WEIGHT MANAGEMENT

- Each item has an item ID in the database and is assigned a weight class
- Five weight classes are defined in Vynamic Scale: normal, light (less than 10g), variable (weights vary regularly), non-weighed (bulky), and manual (set lower and upper limits)
- Items marked as normal are automatically learned into the database; those are the vast majority

THE SOFTWARE DEVELOPMENT KIT

- Diebold Nixdorf provides an interface description for programming the interface from the POS application to Vynamic Scale
- Vynamic Scale comes with a scale client simulator to test the interface and simulate the security scale device, allowing test transactions to be created
- An optional, separate HTML5 UI can be used if the functions should not be mapped in the native self-service application interface; it includes the monitoring of the hardware status and offers various management functions for the maintenance of the items and the intervention handling

VYNAMIC SCALE STORE MANAGER

- Browser-based management tool for reporting functions and statistics
- Periodic reports of attendant item weight interventions fixed by type of confirmation (accepted, ignored, wrong weight accepted)
- Periodic reports of attendant item weight interventions fixed by item identifier
- Periodic reports of attendant item weight interventions fixed by number of interventions

KEY BENEFITS

- Native self-service applications can quickly and easily integrate item validation and benefit from decades of product development and proven processes
- Self-learning weight database
- Sophisticated Item Weight Management and proven Weight Learning Strategy
- The time of the weight check is configurable and can also be carried out outside of the scanning process (e.g., after payment).
- Control of the security scales in the event of unauthorized placement or removal of items
- Slight vibrations of the security scale are ignored and do not cause any intervention

VYNAMIC SCALE: PART OF THE VYNAMIC SELF-SERVICE SUITE OF SOLUTIONS

High connectivity and openness are critical to being adaptive and ready to adopt future innovations, whatever they may be. Vynamic Self-Service is based on a platform approach using open APIs for faster and easier integration. Vynamic Scale is a standalone software stack, separated from Vynamic Self-Service, that enables easy implementation of advanced security features for third-party, self-service applications.