An orderly revolution in waste control.
Most current waste and recycling collection systems follow a static model, where containers are picked up regardless of their content or fill level. This inefficiency has an impact on monetary, environmental, and community costs, with some containers overfilling before they are collected, while others sit empty, yet are picked up anyway. There wasn’t a better way, so we created one.

Victor Stanley Relay™ modernizes this system by monitoring the fill levels and weights of all containers, so that they can be collected at the optimal time. This service saves on collection expenses and ensures resources are allocated efficiently, while reducing fuel costs, carbon footprints, and unsightly overflowing waste.

Customers pay a small monthly subscription fee. Yearly and multi-year subscriptions are available.

**HIGHLIGHTS**

- Efficient resource allocation saves an estimated 70–90% in collection expenses
- Elimination of overfilling improves aesthetic appeal and community satisfaction
- Optimization of collection fleet reduces fuel waste, traffic congestion, and environmental impact
- Monitoring of containers provides holistic view of an area’s trash and recycling status and improves landfill diversion rates
VICTOR STANLEY STREET LEVEL SENSING™

An all-in-one solution, Victor Stanley Relay™ features fully integrated sensors within new and existing Victor Stanley litter receptacles and recycling stations, wireless communications, and dedicated web portal for access to container conditions.

Utilizing our 57 years of experience, we designed our proprietary Street Level Sensing™ technology to meet the challenges site furnishings face in high-use, commercial and urban environments at the street level. This means that fill level, weight, system temperature, container location, and collection status are continuously monitored — and real-time container conditions are automatically transmitted to the Victor Stanley Relay™ Service using standard cellular networks.

To maintain aesthetics, Victor Stanley Relay™ Sensors can be hidden within most Victor Stanley litter receptacles, recycling stations and lids. But smart design is only part of the story because our sensors are designed and built to remain reliable and accurate even in harsh environmental conditions. And they work with any type of waste (general trash, mixed recyclables, paper, glass, metals, etc.) while remaining out of sight, economical, and ecologically friendly.
VICTOR STANLEY RELAY™ SERVICE

The onboard GPS module provides longitude and latitude coordinates of each container and communicates its location to the Victor Stanley Relay™ Service. In turn, our geocoding service automatically looks up the container’s current street address and updates its location. This saves time, money and aggravation when relocating containers for special events or reassignment.

Efficiencies include:

• Elimination of wasteful fixed collection routing
• Reduced fuel costs, resource costs, and CO2 emissions
• Increased environment livability and community satisfaction
• Users can check real-time status of containers
• Customizable alert triggers and push notifications can be set to receive information regarding fill level spikes, container location, collection status and dispatch reporting
• Real-time and historical information to maximize collection planning, scheduling, routing and resource utilization
• Access from anywhere through any device (via web portal) including web browser, smartphone, tablet, etc.

VICTOR STANLEY RELAY™ PORTAL

The Victor Stanley Relay™ Service is powerful and easy to use. Online demos are available upon request; please email relay@victorstanley.com for more details.
DASHBOARD

Identify high-priority containers and pressing issues at a glance.

GROUPS

Manage user details and assign users and containers to groups for easy organization and reference.
CONTAINER SEARCH
View listings of individual container details with filters to isolate variables and narrow your search quickly.

CONTAINER DETAILS
Dive deeper with current and historical data as well as technical details for each receptacle.

DISPATCH
Plan pickup routes and immediately dispatch notifications to relevant parties with the click of a button.
<table>
<thead>
<tr>
<th>Model</th>
<th>Package and Compatibility</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCS-200SCL</td>
<td>(1) Container (1) Wireless Device (1) Fill Level Sensor (1) Relay Subscription</td>
<td>SD-42 with fill level sensing and Relay Service</td>
</tr>
<tr>
<td>CCS-210SCLW</td>
<td>(1) Container (1) Wireless Device (1) Fill Level Sensor (1) Weight Sensor (1) Relay Subscription</td>
<td>SD-42 with fill level, weight sensing and Relay Service</td>
</tr>
<tr>
<td>CCS-220DCL</td>
<td>(2) Containers (1) Wireless Device (2) Fill Level Sensors (1) Relay Subscription</td>
<td>SD-242 with fill level and Relay Service</td>
</tr>
<tr>
<td>CCS-230DCLW</td>
<td>(2) Containers (2) Wireless Devices (2) Fill Level Sensors (2) Relay Subscriptions</td>
<td>SD-242 with fill level, weight sensing, and Relay Service</td>
</tr>
<tr>
<td>CCS-300SCW</td>
<td>(1) Container (1) Wireless Device (1) Weight Sensor (1) Relay Subscription</td>
<td>S-42 with weight sensing and Relay Service</td>
</tr>
<tr>
<td>CCS-310DCW</td>
<td>(2) Containers (1) Wireless Device (2) Weight Sensors (1) Relay Subscription</td>
<td>DYN-242 with weight sensing and Relay Service</td>
</tr>
<tr>
<td>Others</td>
<td>Compatible with dual stream litter receptacles and recycling stations</td>
<td>SD-42 with split liner configuration (1) litter &amp; (1) recyclables</td>
</tr>
</tbody>
</table>

But don't worry, we will configure the right solution for you...
Worldwide W-CDMA (UMTS) and GPRS/EDGE coverage

Onboard GPS module for concurrent reception of up to 3 GNSS (GPS, Galileo, GLONASS, BeiDou), for accurate geolocation and automatic address entry and updates

Automatic address lookups and record updates

Proprietary Victor Stanley Street Level Sensing™ technology — current and historic container fill levels

Self-contained and managed

Single wireless device, single service fee — even for dual container litter receptacles and recycling stations

Battery life display with low percentage indicator

Estimated container weight based on historical data and waste stream type

Proprietary Victor Stanley Street Level Sensing™ technology with integrated weight sensor for measured weight ± 5 lbs (2.27 kg)

Outdoors, high-use, commercial, and urban environments. Indoors, courtyards, mixed-use developments, etc.

**PHYSICAL CHARACTERISTICS**

- Stealthy enclosure hidden within and compatible with most Victor Stanley receptacles, recycling stations and lids. All Sage litter receptacles and recycling stations come standard with Victor Stanley Relay™ Sensor built in with a trial period of the Relay Service.
- Tamper resistant hardware
- 16-gauge spun sheet metal
- 1/8” ABS enclosure cover
- Flame retardant ABS device enclosure
- 1/8” abrasion resistant acrylic sensor cover
- Waterproof gasket
- All fabricated metal components are steel shotblasted, etched, phosphatized, preheated and electrostatically powder-coated with TGIC polyester powder coatings
- Environmental – IP Rating: IP 67 (Dust Tight & Immersion). Operational Temperature (ambient):
  - Typical: -10°F to +110°F (-23°C to +43°C)
  - Rated: -40°F to +140°F (-40°C to +60°C)
  - Environmental Chamber Tested: -40°F to +122°F (-40°C to +50°C)
FEATURES

- Continuously and automatically monitors fill level, weight, location, system temperature, and collection status
- Provides real-time and historical information for analysis and efficient dispatching
- Relay is hosted on a scalable, secure, resilient, and redundant Internet of Things (IoT) specific enterprise-grade cloud computing platform
- Monitors any waste stream – solids, recyclables, etc.
- Zero maintenance
- No installation required
- Off the shelf, economical and easily replaceable Lithium/Iron Disulfide batteries offering superior performance in extreme temperatures
- Additional data access via APIs, JSON, CSV, Excel, XML, and others
- Data access from anywhere and any device via the Victor Stanley Relay™ web portal
- Identity and access management
- Dual container compatible – In certain configurations, one wireless device is capable of monitoring dual container litter and recycling stations while requiring only one Relay service fee. See Package and Compatibility matrix for details.
- Automatically transmits and updates container location when relocated
- Self-contained power supply with an estimated life of 6+ years (typical use monitors once per hour and reports twice daily on average). Battery life may vary depending on configuration, transmission frequency, wireless signal strength and temperature. See battery life expectancy matrix below for further details
- Wireless remote configuration and software updates
- Wireless communications and push notification alerts
- Data can be captured and analyzed to improve efficiencies and operational results

BATTERY LIFE EXPECTANCY

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Configuration</th>
<th>Battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10°F to +110°F (-23°C to +43°C)</td>
<td>90% to 100%</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
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<td>E</td>
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</tbody>
</table>

*All battery claims depend on the cellular network, location, signal strength, environment, configuration, usage, 10% battery manufacturer defect rate, and many other factors; actual results will vary. This document contains typical information specific to products manufactured at the time of its publication for reference only. Contents herein do not constitute a warranty.

*Information and specifications are subject to change without notice
JUST LIKE THAT, YOU’RE IN BUSINESS

ACTIVATION

Victor Stanley Relay™ Sensors come fully integrated with any Victor Stanley side loading litter receptacle or recycling station and are ready to be activated once the container has been anchored on site.

Activation of the Relay Service is performed by simply waving the provided magnetic fob over the activation indicator at the center of the sensor. Activation confirmation can be done in the field using any internet connected smartphone or mobile device.