



Automation | Valves | Measurement | Process Control



SPARTAN CONTROLS TRUCKVUE™ TRUCK LOADING & UNLOADING SYSTEM

Accurately manage, measure, record, and report loading and unloading transactions at truck terminals or transfer points

www.spartancontrols.com



The Spartan Controls TruckVue truck loading and unloading system is designed to accurately manage, measure, record, and report loading and unloading transactions at truck terminals or transfer points, in compliance with local regulatory compliance and industry standards.

The TruckVue system has an installed base of over 300 systems throughout Canada and the US, and is used for a wide range of fluids, including oil emulsion (light/heavy, sweet/sour), condensates, refined petroleum products, NGLs, LPGs, water, municipal (fats, oil, grease, wastewater), and chemicals (ammonia and methanol). As such, many truckers are familiar with how to use the user-friendly interface equipped on the TruckVue system.



The TruckVue system is scalable, flexible, and is configured to suit the needs of your site. A system can consist of as little as 1 transfer point, with up to 14 transfer points accommodated in a single panel. If required, the system can be scaled up further to a larger distributed system with additional panels to increase the number of transfer points managed.

The TruckVue system possesses flexible data management including integration with business systems, web services, FTP servers, and external databases. Peripherals can be interfaced directly with the TMS system, including printers, touchscreen HMI, card and RFID/QR scanners, weigh scales, and many others.

KEY FEATURES & BENEFITS

Plant Control System Interface

- Offers flexible options to interface to plant control systems including through a DeltaV PK Controller or PLC in the panel, to a DeltaV DCS using DeltaV electronic marshalling, and other plant PLC/RTU/DCS
- Interfaces to plant permissives and alarms such as vehicle grounding, tank levels, pump control, fire and gas detection, as well as beacons and horns

Panel Hardware and Software

- Capable of measuring a selection of products including NGLs, LPGs, refined petroleum products, ammonia, water/wastewater, petrochemicals, and others
- Accurate accounting of product received/delivered (oil, water, density, etc.)
- Supports unloading, loading, and bidirectional functionality
- Easy-to-understand trucker and operator interface screens, with customization capabilities
- Supports remote clients and tablets
- Can provide vapour return line metering
- Various ticket output options available including thermal strip ticket printing, network printing, e-mail, and QR code
- Optimizes processing efficiency by directing flow of product to sales oil, emulsion or produced water tanks based on watercut
- Functional acceptance test (FAT) is performed to ensure your specific needs are met prior to shipment to site



Data Management & System Flexibility

- System software is flexible
 - Easily expanded and configured to suit changes to the site requirements, including adding transfer points, instruments, software and interfaces
- Operational and transactional data can be imported and exported remotely through CSV and XML files
- Supports various ERP/web/IIoT services
- Production accounting and field data capture systems including Avocet, FlowCal, PVR, QFAIM, Polaris, and IIoT/Microsoft Azure services
- Logistics/REST Service
 - Interface to external web services for logistical import data such as driver management
- Supports interface to an FTP server by importing operational data or pushing out transactional data through the server
- Can be standalone (local administration) or networked (central administration)
 - Local administration can continue even when network communication is lost, and seamlessly returns to central administration when network communication is restored.
- Network connectivity through Ethernet, TCP/IP and LAN/WAN connectivity allows transactional and operational data to be remotely accessed and concentrated to a single central database across multiple sites
- Maintains a complete history of meter factors from when the meter was placed in service
- Automated generation of daily production reports

Regulatory Compliance

- **AER Directive 17**, Section 10, SK PNG017, BC OGC and API MPMS compliant
- Seamless integration with **Measurement Canada** approved flow computers (DL8000, S600+)
- Suitable for **CSA General Purpose** and **Class 1 Div 2** Area Classification Installations
- Complete audit trail as outlined per **API Chapter 21.2** through time-stamped event, alarm and configuration logs

Experience

The Spartan Controls TruckVue™ system is based on three pillars:

- Measurement
- Service/support
- Interface/data integration

Leveraging 30+ years of experience and a large installed-base, combined with multiple best-in-class technologies and a seamless user interface, Spartan Controls has developed and refined a system that can handle any application. With out-of-the box capabilities for trucker log-in management, permissive checking and data integration, the TruckVue™ system provides a complete solution for all your truck loading and unloading needs.

Measurement

Reducing error means increasing profit.

The Spartan Controls TruckVue™ system utilizes the proprietary AutoComp™ technology, which uses up to three separate water cut analysis methods to measure water cut. This ensures an accurate and reliable measurement over a wide variety of products and water cut ranges.

The TruckVue™ solution can provide significant financial savings in several ways. With this system, sampling during the load is not required as density, water cut, and volume are measured continuously. This ensures that the oil and water volumes are accounted for accurately by measuring the entire load instead of manually spinning periodic samples. Additionally, this results in a reduction of field labour and lab processing requirements, resulting in further operational cost savings. The TruckVue™ system is also equipped with a diverting function that allows clean oil to be diverted directly to a sales tank providing further savings by improving treater efficiency through the reduction of heat or chemical treating, and processing costs.

Micro Motion™ Coriolis flow meters are used for flow measurement and water cut determination, providing dynamic measurements for mass flow, density, and temperature, from which the volume measurement can be directly derived. The meter can be used over a wide range of densities and volume flow rates, while providing custody transfer accuracy.



For many systems, the water cut (WC) calculation is determined by incorporating the density compensated Drexelbrook cut monitor or low cut Phase Dynamics for the 0-5% WC range, and the net oil density comparison from the Micro Motion™ meter for the 5-100% WC range. The density compensated WC devices are used to improve WC resolution to pipeline specification over the 0-5% WC range. In heavy oil applications (>930kg/m³), it is beneficial to also perform the 0-100% WC calculation using a Full Cut Phase Dynamics Microwave Analyzer. The microwave analyzer does not require a minimum oil/water density span in the calculation, allowing it to provide significantly improved water cut accuracy.

Common system options include:

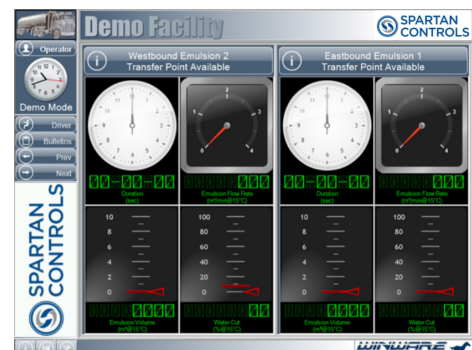
- Ground permissive interlock (GPI)
- Tank levels
- ESD valve output
- Daniel™ Backpressure Control Valve
- Air Eliminator vessel and accessories
- 3-way divert valve control

Accurate Measurement = No Profit Loss

Operator/Trucker Interface & Data Integration

TruckVue's TMS server software is embedded into the system, providing an intuitive trucker interface on the panel's HMI touchscreen. This interface is easy to understand and navigate, allowing users to quickly log-in and proceed with their product transfer. With the continuously growing installed base in Western Canada and beyond, the TruckVue™ platform is becoming widely recognized by truckers providing a sense of familiarity as they load or unload product.

The TruckVue™ system is designed to integrate seamlessly with existing control and production accounting systems, providing customized ease and flexibility in the system's implementation. Additionally, as site requirements evolve, TruckVue's reconfigurable nature allows it to be adapted to changing conditions as necessary.



The TMS Client software facilitates quick and easy trucker log-in, navigation, and initialization of the product transfer. A user-friendly interface has been implemented that flows seamlessly from screen-to-screen and ensures a complete dataset is captured. Additionally, the software conducts a validation procedure, to confirm the transfer is properly set-up, and that the appropriate calculations can be made. The context-sensitive help, scheduling functionality, and

smart search capabilities provide added convenience to the user.

After the transfer is complete, data and detailed ticket scan files are safely recorded in the internal database. Ticket information can be printed on a configurable thermal strip ticket printer installed on the panel, or on a full-page ticket via a network printer. Ticket transaction information can also be e-mailed or uploaded through an FTP server for network access availability. For companies with multiple TruckVue sites, network connectivity will allow each site to be centrally connected for a cohesive overall structure throughout operation.

Complete Solution

Spartan Controls has an extensive product portfolio and can provide many components as part of the overall truck unloading or loading system including measurement instrumentation (pressure, temperature, level, and flow), PSV's, ESDV's, isolation valves, and pressure vessels.

Spartan Controls works with local fabricators, offering complete project management, engineering, and manufacturing services to deliver turnkey metering skid and building solutions, including piping, electrical and instrumentation.

Service and Support

Spartan Controls offers unparalleled service and support capabilities for the TruckVue™ system. Our factory-trained technicians will assist with all commissioning and start-up of the system, from the touchscreen display to the measurement end devices represented by Spartan Controls – all with a single point of contact.

Spartan Controls offers a Preventative Maintenance Agreement (PMA) program that strives to provide the best support and service throughout the lifecycle of the TruckVue™ system. Enrollment to this program provides the site preferred access to customer support, software hot fixes, upgrades, and Spartan's hot spare inventory. PMA also grants members access to request for software re-configurations, providing flexibility for the system to accommodate for any changes to site requirements. Through scheduled site visits, factory-trained technicians can help optimize system performance and extend the life cycle of the hardware by identifying problems early that may affect future system performance or ongoing measurement uncertainty.

All TruckVue™ system components provided by Spartan Controls are supported and warrantied for 18 months from date of shipment, or 12 months from installation. Should you experience a problem with your system, help is just one phone call away, 7 days a week, 24 hours a day, courtesy of our 24/7 program.

Call us or request a quote online 24/7

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