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# CHEMICAL INJECTION SKID OPTIMIZER (CISO)




 New York, United States.

 [sales@processintegrityds.com](mailto:sales@processintegrityds.com)

[Businessdevelopment@processintegrityds.com](mailto:Businessdevelopment@processintegrityds.com)

 [www.processintegrityds.com](http://www.processintegrityds.com)

 +1-270-716-8645



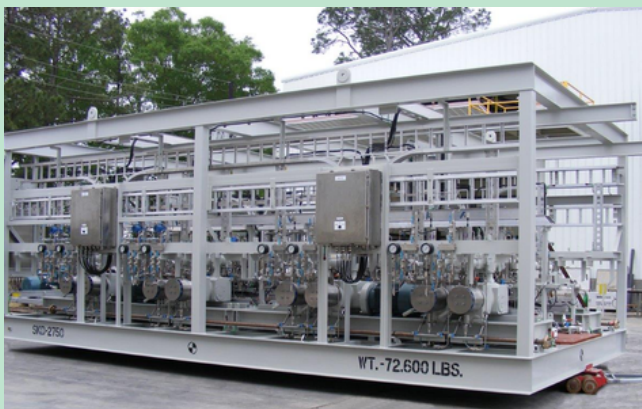
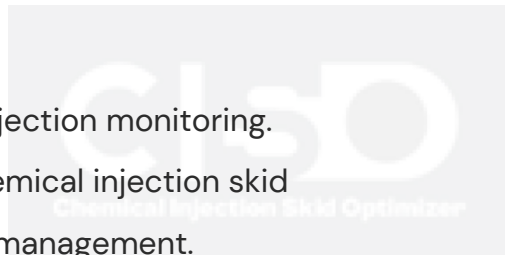
# Chemical Injection Skid Optimizer (CISO)

Intelligent – Secure – Scalable.

- CISO employs IoT for real-time monitoring and adaptive chemical injection rates, cutting waste and enhancing precision in oil industry operations.
- Integrating IoT analytics, CISO upgrades traditional systems with responsive adjustments to conditions, ensuring reliability and safety in chemical injection processes.
- Compact enough to integrate seamlessly with your existing chemical injection systems.
- Smart enough to securely provide unparalleled access and control over your most critical operations.
- Modular and scalable; the CISO system evolves with your needs without rendering current equipment obsolete.

## Features

- Real-time chemical injection monitoring.
- Remote control of chemical injection skid
- Comprehensive data management.



- Automated alerting and reporting.
- Secure data transmission and storage with robust encryption and access control measures.

### Future-proof Chemical Management

- The CISO system is meticulously designed to ensure seamless and comprehensive integration, offering future-proof capabilities for your chemical injection infrastructure.
- Its adjustable and upgradable configuration eliminates concerns about system obsolescence.
- Securely monitor and control your chemical injection system from any internet-enabled device, such as smartphones, tablets, and desktop computers.
- Optimize workforce efforts and streamline spending on proactive, preventative measures, avoiding costly and hazardous reactive maintenance events.
- Achieve comprehensive chemical management with a complete overview of your infrastructure.
- Enhance monitoring functionalities with real-time injection rate monitoring, pump health diagnostics and predictive maintenance capabilities.

### Actionable Data at Your Fingertips

- The CISO system ensures continuous and accurate data readings, surpassing the sporadic nature of manual inspections.
- Gain access to capabilities that allow for remote oversight and tracking of your entire system of sensors and monitoring units.
- Reduce expensive and time-consuming in-person monitoring efforts.
- Centralize data acquisition from various CISO units with real-time monitoring displayed on interactive dashboards.



- Advanced data analytics powered by machine learning predict injection trends and optimize chemical usage.
- Comprehensive analysis of historical data for long-term performance insights and immediate alerts for critical excursions.
- Secure cloud integration with seamless integration to cloud platforms for centralized data management and remote access.

## CISO Application Specifications

### Size

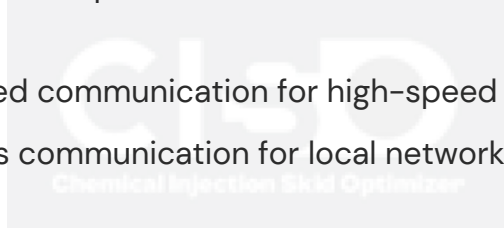
- Fits seamlessly within existing chemical injection systems, including compact deployment in remote locations.

### Material

- Constructed with industrial-grade, weather-resistant materials to protect the robust electronics within the protective casing.

### Communication options

- **LoRaWAN:** Long-range, low-power wireless communication for extensive coverage.
- **Ethernet:** Reliable wired communication for high-speed data transfer.
- **Wi-Fi:** Flexible wireless communication for local network integration.



- Additional communication methods available:
  - Cellular (GSM, LTE)
  - Satellite
  - Radio
  - SCADA
  - Fibre-optics
  - MODBUS
  - Microwave

### CISO System: Improved Efficiency and Performance

- **Remote Management:** Access and manage your entire chemical injection system from anywhere with a web browser.
- **Real-time Insights:** Gain real-time insights into your system's health through interactive dashboards.
- **Predictive Maintenance:** Leverage machine learning for preventative maintenance and system optimization.
- **Advanced Analytics:** Analyze trends and identify root causes for improved performance.

### Hardware Architecture: Designed for Efficiency

- **Sensors:** High-accuracy sensors for monitoring various parameters:
  - **Pressure (bar):** PX835-300GI (Capacitive inductance, ATEX certified)
  - **Temperature (°C):** GTG8ExR (Dependence on temperature change, ATEX certified, IP67-rated)
  - **Level (m):** RPS-409A-80-IS2 (Ultrasonic wave reflection, intrinsically safe ultrasonic sensor)
  - **Viscosity (cP):** XL7 (Mechanical resistance to flow, ATEX-rated viscometer)



- **PH:** SMARTPAT PH 8150 (Polymer electrolyte with KCl, HART® 7)
- **Oxygen (ppb):** GA2800 EX (Electrochemical reaction, ATEX-certified)
- **Data Acquisition:** Intelligent edge devices (Advantech UNO-137, ATEX, and non-ATEX versions) for precise measurements and data logging.
- **Power:** Sustainable operation with integrated power solutions, including solar panels and long-life batteries.
- **Communication:** Reliable wired or wireless options for data transfer using MQTT and Azure IoT Hub.

## Use

Enhances any chemical injection system with remote monitoring and control capabilities:

- Surge-protected analog inputs ensure data integrity.
- Expandable architecture supports multiple sensors and additional control units.
- Digital inputs and outputs facilitate comprehensive system integration.
- Remote monitoring capabilities include:
  - Pressure
  - Temperature
  - Level



- Viscosity
- PH
- Oxygen
- Remote control functionalities through the cloud interface:
  - Injection rate adjustment
  - Pump Start/Stop

### Capacity

- **Data Logging:**
  - Each CISO unit includes a robust data logger capable of storing a month data locally.
  - Unlimited storage capacity upon secure transmission to the cloud-based system.
- **Benefits:**
  - **Real-time Chemical Monitoring:** Continuous and dynamic adjustment of injection systems based on real-time data to optimize chemical usage.
  - **Comprehensive Data Analytics:** Machine learning algorithms for predictive maintenance and optimization of injection performance.
  - **Enhanced Safety and Cost Efficiency:** Reduced need for manual inspections and increased operational safety through real-time alerts and continuous monitoring.



# Book a Demo



[NEW YORK, UNITED STATES](#)



[BUSINESSDEVELOPMENT@PROCESSINTEGRITYDS.COM](mailto:BUSINESSDEVELOPMENT@PROCESSINTEGRITYDS.COM)

[SALES@PROCESSINTEGRITYDS.COM](mailto:SALES@PROCESSINTEGRITYDS.COM)



[WWW.PROCESSINTEGRITYDS.COM](http://WWW.PROCESSINTEGRITYDS.COM)



[+1-270-716-8645](tel:+1-270-716-8645)