

# Diesel Exhaust Fluid Recirculation Monitoring Solution

Maintain the Quality of Stored Diesel Exhaust Fluid

The Veeder-Root Diesel Exhaust Fluid (DEF) Recirculation Monitoring Solution is an **add-on software feature for the TLS-450PLUS Automatic Tank Gauge (ATG)**. It provides a simple mechanism to automate your DEF heat trace or recirculation control to help prevent DEF product from freezing or overheating in lines that utilize DEF in bulk dispensing systems.

The DEF recirculation solution utilizes a temperature sensor to measure the temperature of the DEF fluid between the tank and dispensing system. This allows the TLS-450PLUS ATG to control relays assigned to the DEF Submersible Turbine Pump (STP) to recirculate the fluid in the event it goes below or above a present temperature setting. In addition to controlling the STP to move fluid through the system, the TLS-450PLUS ATG can utilize its temperature sensing technology to manage the heat trace systems and provide a heat source for the DEF piping system.



## ► KEY FEATURES

**Multi-tiered temperature-based control of recirculation and heat trace systems.**

- Use recirculation first to avoid freezing lines
- Add heat trace only when temperature demands it
- Program notifications for alarm conditions

**In cold climates, minimize energy costs by operating freeze prevention only when warranted.**

- Temperature-based pump control for recirculation
- Temperature-based relay control for powering heat trace

**In hot climates, utilize recirculation to help prevent product from degrading in the lines.**



### Specifications

#### Functionality

- Automatic control of DEF relays
- DEF Overview screen with pump usage history
- Manual override capability
- Timeout protection for pump

#### Operating Temperature Range

-40°F to 120°F / -40°C to 50°C

#### Low Temperature Recirculation Activation

User selectable (default set at below 32°F / 0°C)

#### Heat Trace Activation

User selectable (default set at below 19°F / -7°C)

#### High Temperature Recirculation Activation

User selectable (default set at above 86°F / 30°C)

#### Approvals

Temperature Sensor: UL/cUL Listed

#### Console Compatibility

TLS-450PLUS ATG

#### Related Modules

- Universal Sensor Module (USM) for temperature sensor
- Universal Input/Output Module (UIOM) for application requiring 2-Amp relay output
- 10-Amp control module for applications requiring 10-Amp relay output