**DEF Environmental Management**

Veeder-Root’s DEF Environmental Management is an add-on software feature for the TLS-450PLUS. It provides a simple mechanism to automate your DEF heater tape or recirculation control to ensure your product remains unaffected by environmental conditions.

Using currently available TLS-450PLUS modules, readily available temperature sensors and high-power outputs, the TLS-450PLUS offers a complete control system for keeping DEF primed for dispensing.

**Key Features**

Multi-tiered temperature-based control of recirculation and heating systems.
- Use recirculation first to avoid freezing line
- Add heat tapes only when temperature demands
- Customize the response for your application
- Program alerts for undesired 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 heater tapes

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

**Specifications**

**Functionality:**
- Automatic control of DEF relays
- DEF Overview screen with pump usage history
- Manual Override
- Timeout protection for pump

**Operating Temperature:**
-40° to 120° F (-40° to 50° C)

**Low Temperature Recirculation Activation:**
User selectable (below 32° F default)

**Heat Tape Activation:**
User selectable (below 19° F default)

**High Temperature Recirculation Activation:**
User selectable (above 86° F default)

**Approvals:**
Intrinsically safe, UL/cUL (pending)

**Related Modules:**
Universal Sensor Module (USM) for temperature sensor
Universal Input/Output Module (IOM) for application requiring 2A relay output
10A control module for applications requiring 10A relay output

**Software Requirements:**
placement: P/N 329358-001

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