



SpartanPRO™ Truck Unload System (TUS)

Automated FB3000 Truck Unload Panel

By Design

The SpartanPRO™ TUS panel is a field-proven solution for automated, safe crude oil truck unloading at terminals and batteries. Integrating control, flow metering, water cut measurement, safety interlocks, and ticketing into a single panel, it reduces operator intervention, shortens unload times, and ensures accurate custody transfer. Built on the Emerson DeltaV FB3000 RTU platform, it displays real-time flow rates, totals, density, temperature, water cut, and unload time. After unloading, the system prints multi-copy tickets with date, time, trucking details, well LSD, unload data, and corrected volumes per API 11.1 standards. By automating the unload sequence, the SpartanPRO™ TUS panel reduces data errors, enhances safety, and maximizes site throughput.

Key Features

- Support for one truck unload transfer point
- Local HMI interface for displaying real-time volume, flow, density, and temperature measurements along with allowing for system configuration
- Reports corrected total volumes of oil and water for each truck unload transaction
- Local panel ticket printing and optional remote data access / remote monitoring
- 0-100% water cut determination via the following methods:
 - 1. 0-5% density compensated Drexelbrook water cut probe
 - 2. 0-100% or 5-100% net oil density comparison using Micro Motion Coriolis flow meter
 - 3. 0-100% microwave water analysis using Phase Dynamics (heavy oil unloading)
- Compliant with AER Directive 17 regulations and uses API Chapter 11.1 2004 calculations
- Compact, rugged panel design for installation in general purpose locations and is NEMA 4 rated for outdoor installations
- Micro Motion Coriolis flow meter can utilize Smart Meter Verification diagnostics to eliminate or minimize meter proving. (Per Directive 17 Exception 2.6.1)

Well Database

200

Truck Database

100

Historical Ticket Records

250

Meter Prove Records

20

Standard Specifications

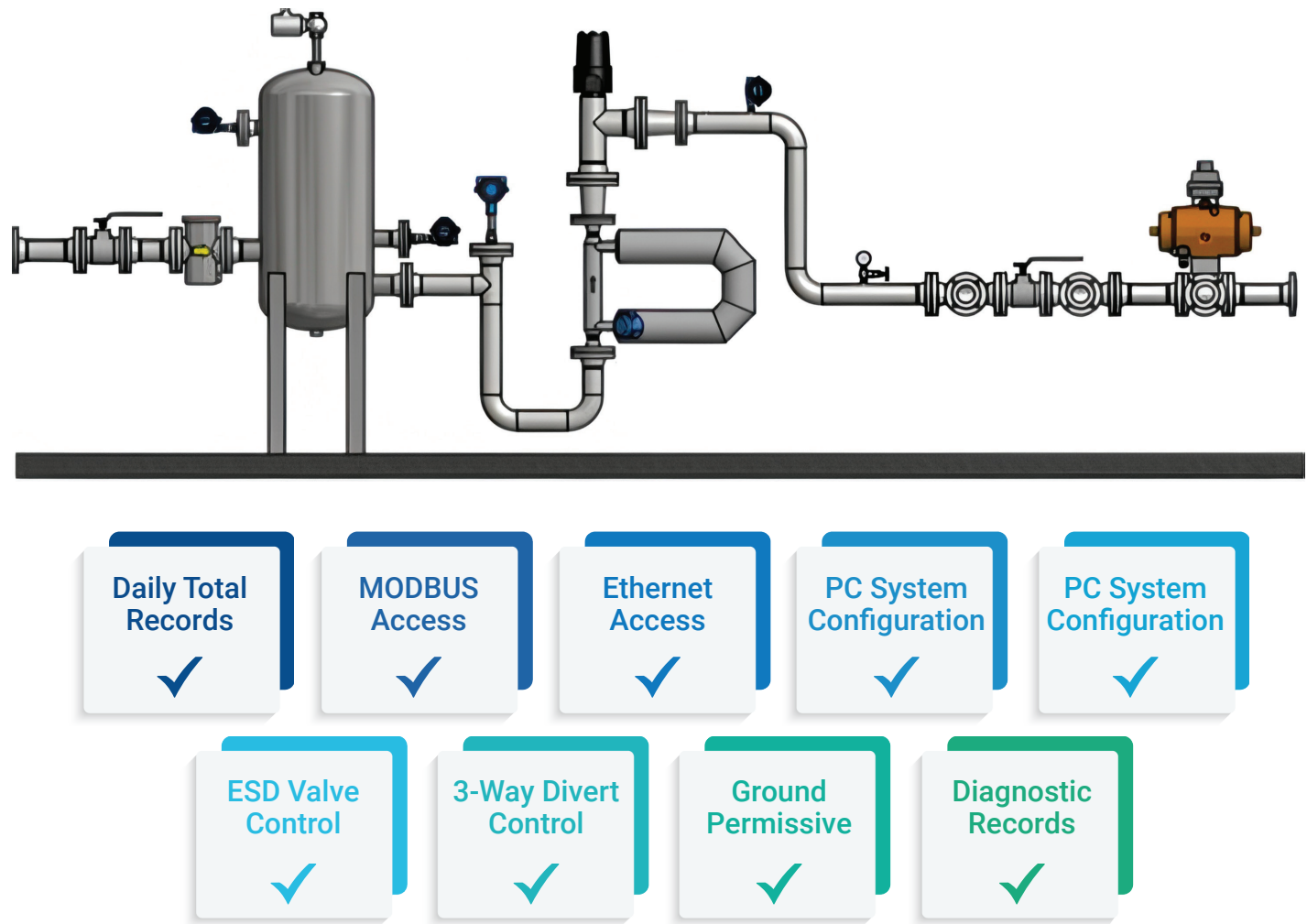
Access / Inputs:	MODBUS, 4-20mA
Flow Metering Input Required:	Micro Motion Elite Coriolis Flow Metering
Water Cut Input Required:	Drexelbrook or Phase Dynamics Water Cut Devices
Temperature Input Required:	Analog input (4-20mA) or RTD input

System Accuracy:

Drexelbrook Water Cut (0-5%):	+/- 0.1% typical
NOC Inferred Water Cut (0-100%):	+/- 1.0% typical
Gross Volume:	+/- 0.1%
Density:	0.2 kg/m3
Mass:	+/- 0.1%

(Recommended Minimum Density Difference: 100 kg/m3 when using NOC inferred water cut)

Typical Truck Unload Layout (Per AER Directive 17)



24" [610mm]

2" [51mm]

36" [914mm]

2" [51mm]

13

A1

SPARTAN CONTROL S1 LTD
STDPNL-FB3000TUS
DWG# STDPNL-FB3000TUS

17

C1

B1

CAN
GP

GP/FUSE
WARNING
LABEL

29

17

FRONT VIEW

